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THE DATES OF VOCALIZATION OF [l] IN FRENCH

by

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ABSTRACT

In the phonetic evolution from Latin to French, preconsonantal /l/ regularly vocalized to [u]. French is the only Neo-Latin language exhibiting systematic and complete vocalization of preconsonantal /l/. An examination of the articulatory aspects of /l/ sounds and their histories in some languages suggests that French vocalization may be described in phonotactic terms as weakening of /l/ in implosive position and as such may be grouped with other instances of consonantal weakening in French.

It is possible to posit eight velar diphthongs resulting from the combination of vocalized /l/ with preceding vowels. Comparison of the development of the velar diphthongs with contemporaneous events in the vowel paradigm corroborates the very scant manuscript evidence for the period of vocalization. Two vocalization digraphs, ou and eu, appear to have been generalized, following monophthongization, to represent all occurrences of the sounds /u/ and /ö/, respectively. This implies monophthongization, and hence prior complete vocalization, by the late eleventh century. To establish the date of commencement of vocalization, two [ou] diphthongs may be compared. The divergent reflexes of [ou] from vocalization and paradigmatic [ou] suggest that commencement of complete vocalization could not have been an early occurrence in French but likely postdated the fronting of ū to /ü/.

Examination of the Early French vowel paradigm indicates a

correlation between developments in the vowel system and monophthongization of the vocalization diphthongs. This correlation corroborates the dates posited for vocalization of preconsonantal /l/ and lends support to the concept of phonological space.

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I. SUMMARY OF THE EVOLUTION OF /l/ IN FRENCH

1.1 Vocalization of [l] in French

In the evolution of sounds from Latin to French, [l] in preconsonantal position regularly vocalized to [u].[1] French is particularly noted for this development since it is the only Neo-Latin language in which [l] has vocalized before all consonants.[2] Vocalization of [l] is one of the outstanding events in the development of French because it resulted in the addition of a number of velar diphthongs to a language already abounding in diphthongal sounds.[3] At least eight apparently distinct velar diphthongs and triphthongs were produced by the combination of diphthongal [u] from vocalized [l] with preceding vowels.[4] These diphthongs eventually simplified at varying rates to become three rounded vowels, [u], [õ]

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[1]See Edouard Bourciez, Elements de linguistique romane, 5th ed. (Paris, 1967), pp. 173 and 308; Alfred Ewert, The French Language, 2nd ed. (London, 1943), p. 41; Pierre Fouché, Phonétique historique du français, III, Les Consonnes et Index général, 856-59; M.K. Pope, From Latin to Modern French with Especial Consideration of Anglo-Norman (Manchester, 1952), pp. 154-55.

[2]See Georges Straka, "Notes sur la vocalisation de l'l," Bulletin Linguistique 10 (Paris, 1942), p. 25.

[3]See W.D. Elcock, The Romance Languages, 4th ed. (London, 1967), pp. 358-60.

[4]These diphthongs and triphthongs are discussed in Chapter IV; see Appendix for examples.

and [o].[5] Examination of the available data regarding vocalization and the subsequent history of the ensuing diphthongs in relation to co-existent sound changes in the language suggests certain limits which may be placed on the commencement and terminal dates of this change in French.

1.2 Classical Latin /l/

Although vocalization in French was confined to [l] in preconsonantal position, the vocalization process may be briefly viewed within the wider context of the history of [l] in all positions in the evolution from Latin to French. From the descriptions of ancient authorities[6] and the conclusions of more modern scholars, it may be asserted that Classical Latin contained a phoneme /l/ which was in isolated opposition to the other consonant members on the basis of the distinctive feature of laterality.[7] Classical Latin /l/ is generally described as a dental consonant with variations in timbre according to its syllable position. However the actual pronunciation of the allophonic variants of /l/ may only be adduced by inference and deduction, and interpretation of a few comments of classical

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[5]Simplification of the diphthongs and triphthongs is discussed in Chapter V. Chapter VI deals further with the varying rates of reduction of the diphthongs.

[6]For a discussion of pertinent descriptions in classical texts, see E.H. Sturtevant, The Pronunciation of Greek and Latin, 2nd ed. (Philadelphia, 1940), pp. 147-49.

[7]Ibid., p. 147. For a model illustrating phonemic analysis, see André Martinet, La Description phonologique avec application au parler franco-provençal d'Hauteville (Paris, 1956), p. 27 and pp. 80-81.

authors.[8] From written records it may be seen that /l/ occurred in initial, intervocalic and final position (laudo, malum, nihil). It also existed as the second member of a consonant cluster which could occur initially and medially (plaga, duplum). In intervocalic position a geminate [-ll-] was distinctively opposed to single [-l-] and thus existed as a separate phoneme (palla 'a long garment' vs. pala 'a spade'). Single [l] also occurred medially before other consonants (alba, falsu) and in this position became subject to vocalization to [u].

1.3.1 Vulgar Latin Allophones - Palatalized [l]

In certain phonetic environments, [l] assumed allophonic variations in Vulgar Latin.[9] Intervocalic [-l-] was affected by the increasing

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[8]See Sturtevant, The Pronunciation of Greek and Latin, pp. 147-50; L.R. Palmer, The Latin Language (London, 1964), p. 219 and Pope, From Latin to Modern French, p. 74.

[9]The term "Vulgar Latin" entails some qualification, for its undefined use has sometimes suggested a separate language which evolved chronologically or was derived from Classical Latin and which sprang into being in the post-classical period as the immediate forerunner of the various Romance tongues. Elcock briefly discusses the term and defines it as the spoken Latin of the Roman Empire (The Romance Languages, pp. 20-21). E. Pulgram in The Tongues of Italy (Cambridge, Mass., 1958), pp. 311-23, more clearly describes the distinction which must be made between the written Latin of documents from the post-classical period to the ninth century, and the unrecorded spoken vernacular which co-existed with Classical and post-classical Latin and which probably varied extensively according to geographical location and various social and cultural factors. In his Comparative Grammar of Greek and Latin (Chicago, 1933), C.D. Buck gives the following definition, which is quoted in part: "This vulgar Latin, from which the Romance languages have sprung, is conveniently so called, to distinguish it from the classical Latin. But it is not to be pictured too precisely, as if it were the Latin of a single social class and the same everywhere. It was, rather, a composite of the speech of all classes, and subject to growing local differences, but always more or less influenced by the literary language. . . . There is no document before the emergence of French, Italian, etc., which can be trusted as a full and faithful representation of the current vulgar Latin speech."

stress accent in two phonetic contexts. Unstressed front vowels in hiatus became semi-consonantal yods which in turn palatalized a preceding [l]: PÁLEA> [paly a].[10] Increasing stress also resulted in syncopation of unstressed vowels which brought a previously intervocalic [-l-] into contact with a preceding consonant (AURICULA > [aurik'la]).[11] When [l] was by this means brought into contact with a preceding velar consonant, [k] or [g], the latter palatalized in preconsonantal position and in turn palatalized the [l] (AURICLA > [aurik'la] > [aurily a]).[12] The palatalized [ly] from these two sources became a single phoneme [-l̰-] in distinctive opposition with non-palatal [-l-] in intervocalic position.[13] This development was underway by the time of the late Empire and was carried into Italian, Spanish and Portugese as well as Gallo-Roman.[14]

1.3.2 Vulgar Latin Allophones - Velarized [l]

In medial position, preceded by a vowel and followed by a

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[10]See Albert Dauzat, Tableau de la langue française (Paris, 1967), p. 108 and Ewert, The French Language, p. 70.

[11]See J. M. Anderson, "A Study of Syncope in Vulgar Latin," Word (1965), p. 71.

[12]See Ewert, The French Language, p. 68; Elcock, The Romance Languages, p. 364 and Pope, From Latin to Modern French, p. 133.

[13]Ibid., p. 153.

[14]See Peter Boyd-Bowman, From Latin to Romance in Sound Charts (Kalamazoo College, 1954), p. 72.

consonant, [l] is frequently said to have acquired a velar pronunciation in Vulgar Latin.[15] Maurice Grammont describes the development of velar [ɬ] in preconsonantal position and suggests that it was a characteristic feature of Latin:

> Le traitement le plus ordinaire de l'l entre voyelle et consonne consiste à le transformer en un l vélaire. . . . La voyelle qui précède tendant à faire anticiper ses mouvements articulatoires, la pointe de la langue perd la fermeté de son point d'appui; c'est-à-dire que la langue se détend et que par suite sa partie postérieure remonte vers la voûte palatine. Le glissement latéral est donc rapporté plus en arrière: c'est l'l vélaire. Cet état est d'une manière générale celui du latin . . .[16]

Whether [l] sounds should ever properly be described as "velar" and whether or not a truly velar [ɬ] ever existed in Latin,[17] the assumption of a specially coloured preconsonantal allophone has formed the basis for accounts of vocalization in that position.

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[15]Most Romance scholars allude briefly to a "velar" l in describing the evolution of preconsonantal l. See, for example, Bourciez, Eléments de linguistique romane, p. 173; Albert Dauzat, Tableau de la langue française (Paris, 1967), p. 111; William J. Entwistle, The Spanish Language, Together with Portugese, Catalan and Basque, 2nd ed. (London, 1943), p. 41. For a discussion of the existence of a dark allophone in early Latin, see Sturtevant, The Pronunciation of Greek and Latin, pp. 148-50.

[16]Traité de phonétique (Paris, 1963), p. 207.

[17]The use here and in following paragraphs of the term "velar" is for convenience only, in accordance with its widespread use in other texts. For a discussion of the accuracy of the term to describe a dark or back [ɬ] sound, see para. 2.7 and para. 2.10. The application of the term to Romance [l] sounds is discussed in para. 2.8.

1.4 French Developments

With the exception of the two allophonic variants just discussed, palatal [l̮] and velar [ɬ], the evolution of l was conservative in French. The lateral remained essentially unchanged in initial and intervocalic position (LUNAM > lune, MALUM > mal). Similarly, consonant clusters containing [l] as a second element remained unchanged (except for intervocalic sonorization) in initial and medial position (PLACERE > plaisir, DUPLUM > double). In intervocalic position, the geminate opposition was lost throughout the consonant system, with geminate [-rr-] being the last to disappear. Geminate [-ll-] accordingly simplified and its reflex merged with the already existent single intervocalic [-l-].[18]

1.5 Palatal [l̮]

Palatal [l̮] in intervocalic or final position (following the loss of final vowels) became a phoneme distinctively opposed to non-palatal /-l-/ in these positions in Gallo-Roman and Early French.[19] However it lost its lateral quality in the sixteenth century in a popular pronunciation which spread from Paris.[20] The modern reflex is thus the phoneme /j/ (yod), e.g. TRIPALIUM > [traval'] > [travaj].

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[18]See Dauzat, Tableau de la langue française, p. 107 and Pope, From Latin to Modern French, p. 147.

[19]Ibid., p. 153

[20]See Ewert, The French Language, pp. 87-88.

This development affected all instances of the palatal [ʝ] except those which came by syncopation of an unstressed vowel to be in preconsonantal position. The latter depalatalized and became velarized after all vowels except [i] by the Old French period (*TRIPALIOS > [travaʝts] > [travaɬts]).[21]

1.6 Velar [ɬ]

Following the emergence of palatal [ʝ] in intervocalic position, the so-called velar [ɬ] in preconsonantal position began to undergo a change. In a development generally attributed to the eleventh and twelfth centuries, preconsonantal [l] lost its laterality and was either entirely effaced or vocalized to [u] in French after all vowels. Previously intervocalic [-l-] and palatal [-ʝ-] when brought into preconsonantal position through syncopation of unstressed vowels also velarized and vocalized (CALIDU > [kaldo] > [ʃaud], MELIOR > [mjeldr] > [mjeudrə]). Modern French now contains no velar [ɬ] since this [ɬ] lost its laterality by becoming a diphthongal [-u̯] (ALBA > aube), or was entirely

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[21] See Ewert, The French Language, p. 39 and Pope, From Latin to Modern French, p. 153.

effaced (FĪLIUS > fils).[22] The disappearance of the velar [ɬ] did not immediately disrupt the consonant system[23] since this [ɬ] had been simply an allophonic variant of /l/ in preconsonantal position. However when the [-u̯] resulting from vocalization combined with preceding vowels to form a new series of diphthongs and triphthongs, the vowel system was affected. Hence the most obvious and direct impact of the vocalization of [l] in French was upon the evolving vowel system.

1.7 Vocalization in Romance

Vocalization of preconsonantal [l] is an especially important feature in the evolution of French because it was regular and affected all instances of preconsonantal [l]. This has not been the case among other Romance languages.[24] Thus, although some vocalization occurred in Provençal, Gerhard Rohlfs reports that "the change in Old Prov. did not prevail as generally as in Old

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[22]See Pope, From Latin to Modern French, p. 153: "It has come about that the sound system of standard Modern French comprises l, the dental lateral, only." See also Albert Valdman et al, A Drillbook of French Pronunciation (New York, Evanston and London, 1964), p. 62 and A. Lloyd James, Historical Introduction to French Phonetics (London, 1968), pp. 79-80.

[23]For a different view, see Jurgen Klausenburger, French Prosodics and Phonotactics, Beihefte zur Zeitschrift für Romanische Philologie 124 (Tubingen, 1970), p. 62.

[24]For a discussion of the evolution of preconsonantal [l] in Romance, see Lucius G. Moffatt, "A Physiological and Historical Study of Preconsonantal L in the Romance Languages," Ph.D. dissertation (Harvard University, 1929), pp. 208-45.

French."[25] On the Iberian peninsula vocalization appears to have been somewhat erratic. In Spanish and Portugese preconsonantal [l] sometimes vocalized after [a] and when followed by a voiceless consonant, especially a dental consonant.[26] However, even in these cases there are inconsistencies. For example, place names such as Montoto (< Monte Altu),[27] in which the [l] of altu has vocalized, contrast with modern alto (< altu) in which [l] has either remained or been restored. The irregularity of Iberian developments has been ascribed to conservative pressures of learned and semi-learned influence.[28] Vocalization of preconsonantal [l] to [u] is very infrequent and sporadic in Italian[29] and in the two major dialects of Rumanian,[30] which suggests that either a "velar" [ɬ] did not occur in Eastern

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[25]From Vulgar Latin to Old French, An Introduction to the Study of the Old French Language (Detroit, 1970), transl., Vincent Almaz and Lilian McCarthy, p. 47.

[26]See Bourciez, Elements de linguistique romane, pp. 173-74 and R. Menéndez Pidal, Orígenes des español, 4th ed. (Madrid, 1956), p. 110.

[27]See Moffatt, "A Physiological and Historical Study of Preconsonantal L in the Romance Languages," p. 217.

[28]Ibid., pp. 208-29. See also Boyd-Bowman, From Latin to Romance in Sound Charts, p. 74, for further examples.

[29]See Mario Pei, The Italian Language (New York, 1941), p. 42.

[30]See Moffatt, "A Physiological and Historical Study of Preconsonantal L in the Romance Languages," p. 245.

Romance or that a previously velar [ɬ] was later restored to a dental or alveolar variety in the Eastern area.[31]

1.8 Variation in Romance Developments

The diverse history of preconsonantal [l] among the Neo-Latin languages indicates that the notion of a velar allophone in preconsonantal position is insufficient by itself to fully account for French vocalization. If such an allophone existed in Vulgar Latin, additional factors must be found to account for the fact that though vocalization has been only partial, sporadic or almost non-existent in other Romance languages, it has been complete and regular in French. To further explore the possible reasons for French vocalization and the date of its occurrence, it is useful to investigate some of the phonetic aspects of [l] sounds and their histories in some languages in which vocalization has occurred.

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[31]The latter view is held by Straka. See "Notes sur la vocalisation de l'l," p. 25.

II. PHONETIC ASPECTS OF THE VOCALIZATION PROCESS

2.1 Laterality

The [l] sounds are distinguished from other non-nasal sounds on the basis of their lateral quality. The essential feature in the production of an [l] sound is lateral escape of the air stream along one or both sides of the tongue. The tongue tip must complete closure with the teeth, gum-ridge or hard palate in order to block the middle of the buccal passage and thus force the air to escape laterally.[1] Several varieties of laterals are found in languages and so is the process of vocalization. A description of the articulatory aspects of laterals and their behavior in different languages is pertinent to the study of vocalization in French since the actual process, and in particular the nature of the [l] which vocalized, can only be conjectured from written records.

2.2 An [l] is a Lateralized Vowel

Daniel Jones pointed out that while contact of the tip of the tongue with the teeth, gum-ridge or hard palate is essential to laterality, the main body of the tongue is nevertheless free to take up various positions in the mouth. The variations in position of the main body of the tongue produce alterations in the quality

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[1]See James, Historical Introduction to French Phonetics, p. 78. For a discussion of the differences and similarities of [l] and [r] as "liquids", see Rebecca Posner, Consonantal Dissimilation in the Romance Languages (Oxford, 1961), pp. 101-05.

or resonance of the [l] sound being articulated.[2] These positional variations of the main body of the tongue resemble the variations in tongue position which distinguish vocalic aperture and timbre. In the articulation of an [l] sound, the main body of the tongue may in fact take up the position required for any given vowel. The quality of the [l] sound so produced will bear a close acoustic resemblance to the vowel produced with the same tongue position. James expresses this characteristic of the [l] sound by describing it as a "lateralized vowel."[3] In other words, [l] is "a series of vowel sounds made with the tip of the tongue touching the gums, or teeth, or even the hard palate, leaving the sound to escape at one side or at both sides of the tongue."[4]

2.3 Classes of [l] Sounds

If [l] sounds phonetically represent a series of lateralized vowels, they may be described and classified on the basis of resonance, according to the position of the main body of the tongue. James points out that "even the untutored ear can hear the difference between a lateralized i and a lateralized u." On this basis he divides [l] sounds into two broad classes:

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[2] An Outline of English Phonetics, 8th ed. (Cambridge, 1957), p. 174.

[3] Historical Introduction to French Phonetics, p. 78.

[4] Ibid., p. 124.

those which are lateralized front vowels and those which are lateralized back vowels, or, stated in another way, "there are [l] sounds with the resonance of front vowels and [l] sounds with the resonance of back vowels."[5] The former variety is usually called "clear" l, while the latter is referred to as "dark" l.

2.4 Vocalization of [l]

If [l] is phonetically a lateralized vowel, any vowel can be lateralized by raising the tip of the tongue to touch the teeth, gum ridge or hard palate, thus blocking the centre of the vocal passage and allowing the air to escape laterally. It is the lateral escape of the air caused by the contact of the tongue tip which distinguishes lateralized vowels ([l] sounds) from ordinary vowels. The reverse process of changing a lateralized vowel ([l] sound) into a non-lateralized vowel means phonetically that the tongue tip merely fails to reach the teeth (or gum-ridge or hard palate) and the sound no longer escapes laterally.[6] This is one of the things which happens during the process of vocalization.

2.5 Vocalization of "Clear" [l]

Many languages have both front and back varieties of [l] sounds and the division of [l] sounds into front and back classes is pertinent to the history of their vocalization in the various

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[5] Historical Introduction to French Phonetics, pp. 78-79.

[6] Ibid., pp. 124-25.

languages in which it has taken place. Since clear or front [l] sounds closely resemble front vowels, the product of vocalized clear [l] is a front vowel, usually [i]. In a number of languages, [l] has vocalized to [i]. Jones explains that in clear varieties of [l] there is raising of the main body of the tongue in the direction of the hard palate.[7] As this approximates the tongue position of [i], loss of laterality results in the change of [l] to [i]. The vocalization of [l] as the second member of a syllable initial consonant cluster is regular in Italian.[8] All pre-vocalic consonant + l clusters were affected: CLAMARE > chiamare, FLAMMA > fiamma, GLANDE > ghiande, PLANU > piano, UNGULA > unghia. In Rumanian, vocalization of [l] to [i] was confined to clusters of a dorsal consonant + l, while the groups pl, bl and fl were retained.[9] Examples of vocalization to [i] have also been noted outside the Romance family. O. von Essen cites the Bavarian dialect in which Holz becomes [hoits] and mentions other southern German dialects which show regular vocalization of [l] to [i].[10]

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[7] An Outline of English Phonetics, p. 174.

[8] See Pei, The Italian Language, p. 42.

[9] See Ovide Densusianu, Histoire de la langue roumaine (Bucarest 1929), pp. 215 and 228.

[10] "An acoustic explanation of the sound shift [ɬ] > [u] and [l] > [i]," In Honour of Daniel Jones (London, 1964), p. 54. Further examples quoted in the article are from the Munich dialect which has foisch 'false' and hoib 'half'.

2.6 Vocalization of "Dark" [ɬ]

Since "dark" [ɬ] sounds closely resemble back vowels, the reflex of a vocalized dark [ɬ] is a back vowel, usually [u]. Vocalization of [ɬ] to [u] has occurred in several languages outside the Neo-Latin group. Vocalization of dark [ɬ] occurred in English[11] and preconsonantal [ɬ] is no longer heard in many words although it is preserved in spelling. Essen gives further examples of a change from [ɬ] to [u] in some Low German dialects and in Polish.[12] Polish [ɬ] may become [u] in all positions and since the vocalization process is occurring in modern times, it can be observed and studied as it takes place.[13]

2.7 Velar [ɬ]

Slavic [ɬ], now in the process of vocalizing to [u] in Polish, has frequently been described as a vocalic or dark [ɬ].[14] The special sound of this dark [ɬ] has led several scholars to call it

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[11]"An acoustic explanation of the sound shift [ɬ] > [u] and [l] > [i]," p. 53.

[12]Ibid., p. 54.

[13]See Straka, "Notes sur la vocalisation de l'l," pp. 5 and 24.

[14]Ibid., p. 16: "Le caractère vocalique de l'ɬ slave [est] reconnu par tout le monde."

a velar [ɬ] on the assumption that its production involved raising of the back of the tongue towards the velum.[15] For example, Georges de Kolovrat goes as far as postulating occlusion in the production of velar [ɬ]:

> Le l dur se prononce avec le milieu de la langue abaissée (sic) et, partant, avec la racine de la langue touchant le voile du palais, ce qui justifie le terme de l vélaire appliqué à ce son.[16]

Thus the terms "Slavic l," "velar l" and "l dur" have often been used, more or less synonymously, to describe the dark [ɬ] of the Slavic languages and to distinguish this type of [ɬ] from clear [l] sounds.

2.8 Velar [ɬ] in Vulgar Latin

Because preconsonantal [l] has regularly vocalized to [u] in the evolution from Latin to French, many scholars have drawn an analogy with Slavic developments and assumed that Vulgar Latin preconsonantal [l] must have had the same characteristics as the vocalizing dark [ɬ] found in Polish.[17] Moreover, since this variety of [ɬ] in Slavic was described as a velar [ɬ], a

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[15]"Notes sur la vocalisation de l'l," pp. 8 and 13.

[16]"Etude sur la vocalisation de la consonne 'l' dans les langues romanes," thèse (Paris, 1923), p. 52, as quoted by Lucius G. Moffatt in "A Physiological and Historical Study of Preconsonantal L in the Romance Languages," Ph.D. dissertation (Harvard University, 1929), p. iv. See also Grammont, Traité de phonétique, p. 207, and above para. 1.3.2.

[17]See Straka, "Notes sur la vocalisation de l'l," pp. 5-6.

velar [ɬ] sound was attributed to preconsonantal [l] in Vulgar Latin.[18] Those who support the notion of a velar [ɬ] allophone in preconsonantal position in Vulgar Latin frequently cite the testimony of Latin grammarians such as Diomedes, Consentius and Priscian, who used such terms as plenus, pinguis, exilis in referring to the pronunciation of preconsonantal [l].[19] These terms have been interpreted by some to indicate that preconsonantal [l] was a dark, vocalic allophone and hence a velar [ɬ] in Vulgar Latin. Bourciez, for example, says:

> En latin vulgaire, l devant consonne se prononçait d'une façon "épaisse" au dire des grammariens (pinguis debet proferri, Consentius, K. V. 394, 31): c'était donc un l vélaire ayant son point d'articulation près de la racine de la langue, et déjà

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[18]For a detailed review of previous studies which subscribe to the velar [ɬ] theory for Vulgar Latin, see Moffatt, "A Physiological and Historical Study of Preconsonantal L in the Romance Languages," pp. 37-64. Among those who accept this hypothesis, Moffatt cites the following (p. 40): W. Meyer-Lübke, Einführung in das Studium der romanischen Sprachwissenchaft, 2nd ed. (Heidelberg, 1909), p. 150; F. G. Mohl, Introduction à la chronologie du latin vulgaire (Paris, 1899), p. 277; E. Schwan, and D. Behrens, Grammaire de l'ancien français, Fr. transl., O. Block (Leipzig, 1923), p. 166, and Paul Voelkel, Sur le changement de l'L' en 'U' (Berlin, 1888), p. 28. For a list of some other writers who claim a velar [ɬ] for Vulgar Latin, see Chapter I, note 14.

[19]Moffatt reproduces a number of quotations from these and other grammarians and discusses them in "A Physiological and Historical Study of Preconsonantal L in the Romance Languages," pp. 37-48 and 66-96. Some of the references given by Moffatt (presumably from Keil's Grammatici latini, 8 vols. [Leipzig, 1857-1880]), are as follows: Diomedes (fourth century), Keil I, 453; Consentius (fifth century), Keil V, 394; Priscian (sixth century), Keil II, 29.

voisin du son u . . .[20]

2.9 Objection to the Velar [ɬ] Theory

The conclusion that Vulgar Latin possessed a velar [ɬ] in preconsonantal position may be questioned on several counts. Made on the basis of the evidence of grammarians using such terms as pinguis, exilis, plenus, such a conclusion seems over hasty and perhaps unwarranted since the meaning of these terms is by no means certain.[21] Moffatt warns against the danger of interpreting such terms out of context and points out that they are often used inconsistently and may refer to such things as force of articulation and length rather than the phonetic quality of the sounds involved.[22] He concludes that since the grammarians did not agree with each other, knew little about phonetics and were concerned chiefly with metrics and quantity, their descriptions do not offer a sound basis on which to conclusively establish the pronunciation of Vulgar Latin preconsonantal l.[23]

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[20] Eléments de linguistique romane, p. 173. See also Bourciez, Précis historique de phonétique française, 9e ed. (Paris, 1953), p. 255.

[21] Sturtevent claims that: "the terms exilis, plenus, pinguis are, as usual, almost impossible to interpret," (The Pronunciation of Greek and Latin, p. 78).

[22] "A Physiological and Historical Study of Preconsonantal L in the Romance Languages," pp. 85-87, pp. 91-93.

[23] Ibid., p. 46.

2.10 The Term "Velar" is Inaccurate

A further objection to the hypothesis of a velar [ɬ] in preconsonantal position in Vulgar Latin is in the term "velar" itself. The notion of a velar [ɬ], drawn by analogy from the Slavic languages, has implied velar constriction of some kind produced by raising of the back of the tongue towards the soft palate or velum.[24] Georges Straka raises the fundamental question of whether or not any form of velar constriction does in fact play a part in the production of Slavic dark [ɬ]. Using direct observation, the artificial palate, a coloring device applied to palate and teeth, and X-rays, Straka studied the articulation of dark [ɬ] by several Russian speakers. He observed that no such constriction takes place:

> Aucun contact [de la langue postérieure] ne se produit, ni contre les bords du palais, ni contre les molaires; il n'y a donc pas de constriction vélaire. L'unique point d'articulation se trouve à la limite des incisives supérieures et des alvéoles . . .[25]

As corroboration for his observations, Straka cites the research of Ščerba (in Mémoires de la Société de Linguistique de Paris, XVI [1910-11], 280-84), who also used the artificial palate to demonstrate that for both Russian and Polish dark [ɬ], the tongue tip rested against the upper teeth or alveolar ridge, farther forward than in clear [l], and that the rest of the tongue was

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[24]See para 2.7 above.

[25]"Notes sur la vocalisation de l'l," p. 13.

flat.[26]

2.11 Articulatory Features of Dark [ɬ]

Having demonstrated that raising of the back of the tongue to form a velar occlusion is not a requisite feature in the production of Slavic dark [ɬ], Straka goes on to describe his analysis of its characteristics. One of the essentials in the articulation of [ɬ] is the flattening or lowering of the main body of the tongue which in turn causes advancement of the place of articulation from the palate to the front of the alveolar ridge and teeth.[27] The other essential is movement of the root of the tongue towards the back which produces constriction at the pharynx resulting in a large resonating cavity, as follows:

> Par ce rétrécissement qui est semblable à celui qui se produit au même endroit pour la voyelle o, les résonateurs supralaryngiens sont divisés en deux au niveau du pharynx bien plus qu'au niveau du lieu d'articulation: l'un, relativement petit, entre la glotte et le rétrécissement pharyngal, l'autre très grand, au-dessus et en avant de ce rétrécissement. C'est là la cause de l'aspect acoustique et auditif relativement grave de l'l et de sa ressemblance avec o.[28]

Straka concludes that dark [ɬ] is not a velar articulation and should instead be classified as a pharyngeal apico-alveodental

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[26]"Notes sur la vocalisation de l'l," p. 12.

[27]"Contribution à la description et à l'histoire des consonnes L," Travaux de linguistique et de littérature 6 (Strasbourg, 1968) pp. 276-77.

[28]Ibid., p. 275.

consonant.[29]

2.12 Dark [l] in Vulgar Latin

Moffatt is adamant in claiming that Vulgar Latin preconsonantal [l] was not a dark [ɫ] like the one found in Slavic. However, since he accepts Slavic [ɫ] as a true velar consonant, whereas he judges Romance dark [ɫ] to be merely a sub-variety of normal [l] with no velar occlusion, it is easy to follow this part of his argument.[30] Straka makes the same claim, that Vulgar Latin preconsonantal [l] was not identical to Slavic dark [ɫ],[31] but since he would affirm that neither is a velar consonant, it is difficult to grasp the exact articulatory basis of his distinction between the two.[32] However both writers allude to a point which will be of fundamental importance to their respective theories of the evolution of preconsonantal [l] and

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[29]"Contribution à la description et à l'histoire des consonnes L," p. 279.

[30]"A Physiological and Historical Study of Preconsonantal L in the Romance Languages," pp. 185-90. In speaking of Slavic [ɫ], Moffatt claims the root of the tongue, or back part, forms occlusion with the soft palate, p. 185. For his definition of normal l, see pp. 31-32 and pp. 187-88.

[31]"Notes sur la vocalisation de l'l," p. 21: "Je ne crois . . . pas que l'l pinguis ait jamais été une véritable l dure slave."

[32]Loc. cit. Straka appears to suggest that if the weakened [l] he postulated for Romance does reach an articulation similar to Slavic [ɫ], this stage is lost in Romance [l] almost at the moment it is reached: "Nous avons vu que l'avancement de la pointe, indispensable pour garder le contact, amène une certaine tension musculaire. Or l'l relâchée, affaiblie, sans doute incapable de cet effort, n'a pas dû conserver longtemps le contact de la pointe; celui-ci a dû être levé presque aussitôt que la pointe eût pu prendre la position d'une vraie ɫ dure."

which is worth repeated emphasis in any comparison between Slavic and Romance vocalization. The point is that the [l] which vocalized to [u] in Romance was either preconsonantal or, more rarely, in word final position.[33] Quite a different situation exists in the history of vocalization to [u] in the Slavic languages where vocalization of [ɬ] occurs in all positions: initial, prevocalic, intervocalic, preconsonantal, postconsonantal and final.[34] It is on the basis of this difference between Slavic and Romance that both Straka and Moffatt launch their arguments for a weakened preconsonantal [l], as opposed to a true Slavic [ɬ], in Vulgar Latin.

2.13.1 Weakened or Lax [l]

On the basis of the implosive position of preconsonantal [l] in Vulgar Latin, both Moffatt and Straka posit vocalization through weakened articulation. Straka describes the process as follows:

> Dans les langues romanes, on le sait et je l'ai rappelé, la vocalisation de l'l a eu lieu surtout devant une consonne et en fin de mot. Or, dans ces deux cas, et en particulier dans le premier, la consonne est en position faible; sa tension est décroissante. . . . Il n'y a donc rien de

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[33] "Notes sur la vocalisation de l'l," p. 18.

[34] Ibid., p. 5. See also Moffatt, "A Physiological and Historical Study of Preconsonantal L," p. 186 and Essen, "An acoustic explanation of the sound shift [ɬ] > [u] and [l] > [l]," p. 54.

> plus naturel qu'un affaiblissement articulatoire se produise pour cette consonne. Et celui-ci se traduit, comme toujours pour les consonnes, par un relâchement musculaire, et, par conséquent, par un abaissement de la langue, et son décollement plus ou moins sensible du palais . . .[35]

Thus a weakened articulation in implosive position causes the tongue to flatten and the tip to fail to make contact. Moffatt describes the process in a similar manner: a weakening of muscular effort, especially in syllable final position,[36] causes a relaxation of the body of the tongue to an almost flat position in the mouth. This in turn affects the tongue tip until occlusion is finally entirely omitted.[37]

2.13.2 Weakened [l] a Positional Variant

Both Moffatt and Straka appear to regard the weakened preconsonantal [l] as a positional variant or sub-variety of "normal" [l]. Since [l] sounds are very susceptible to fluctuation without losing the essential quality of laterality,[38] preconsonantal [l] is merely a variation conditioned by its

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[35]"Notes sur la vocalisation de l'l," p. 18.

[36]"A Physiological and Historical Study of Preconsonantal L," p. 187.

[37]Ibid., p. 191.

[38]Ibid., pp. 188-89. See also para. 2.2 above.

implosive position. Moffatt classifies [l] sounds as normal, velar and palatal[39] and names Romance preconsonantal [l], as well as English "hollow" [l] (as in noble, full, fault), a weakened variety of normal [l].[40] Straka points out that medium [l] (l moyenne) varies in articulatory force according to its position in the syllable. For strengthened [l], in initial position for example, the tongue tip retains contact with the palate and the body and edges of the tongue are raised. For weakened [l], in implosive position for example, as in the French past definite palpa, tongue contact with the palate diminishes in width and disappears almost entirely on the sides, while the tip, as a consequence of this flattening movement, slides down.[41]

2.14 Varying Degrees of Laxness

Straka describes variation of articulatory force in [l], together with the resultant fluctuations in the phonetic and acoustic quality of its production as these relate to Romance developments:

> Ces déplacements, que l'on observe encore actuellement . . . se sont produits sans

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[39]Moffatt does not define palatal [l] or describe how it differs from his "normal" [l]. For his interpretation of velar [ɬ] see para. 2.12 and note 31 above.

[40]"A Physiological and Historical Study of Preconsonantal L," pp. 31-32.

[41]"Notes sur la vocalisation de l'l," p. 20.

> aucun doute au cours de l'évolution des langues romanes, plus exactement déjà en latin. Seulement là, ils se sont produits dans une plus grande mesure et ont abouti d'une part à la mouillure (renforcement articulatoire), et d'autre part à la vocalisation (affaiblissement en fin de syllabe).[42]

Thus variations in the articulatory force of [l] were present in Latin, according to Straka, and resulted in strengthening of [l] or weakening of [l] to the point of vocalization, according to its syllabic position. Straka goes on to account for the diversity of results in Romance by postulating stabilization of [l] at varying degrees of weakness. Thus, in certain Romance idioms, [l] evidently stabilized as a kind of [ɬ], although physiological descriptions indicate that the results of stabilization differed in Portugese, Catalan and Rhaetian and that none of these Romance [l] sounds is identical to Slavic [ɬ].[43] In other Romance dialects, Straka continues, the weakening of lax [l] was carried even farther. Complete loss of occlusion occurred at the stage when the tip was progressively lowering behind the lower teeth, while the back of the tongue continued to retain the position of a lax [l] (similar to [ɬ]). As this position is closest to that of [o] or [u], a back vowel appeared at the moment occlusion of the tip was lost.[44]

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[42]"Notes sur la vocalisation de l'l," p. 20.

[43]Ibid., p. 21. Straka cites G. de Kolovrat, "Etude sur la vocalisation de la consonne 'l' dans les langues romanes," who claims a number of times in his thesis that these Romance [l] sounds are not identical to Slavic [ɬ].

[44]"Notes sur la vocalisation de l'l," pp. 21-22.

2.15 Partial Vocalization

Traditional spellings of words in which vocalization has taken place sometimes suggest a preliminary stage of partial vocalization in which a [u] sound intrudes before the [l]. Essen describes this stage as it applies to vocalization of pre-consonantal [l] in English: "We know that in the First Modern English there appeared an [u] sound between a vowel and [l], and that later on the [l] was dropped so that the [u] sound remained."[45] He refers to Henry Sweet who described the second stage of the process, in which [l] was dropped, and provided some examples: half [hau̯f > hauf], folk [fou̯k > fouk], should [ʃuuld > ʃud].[46] A few similar spellings, reflecting a possible stage of partial vocalization to [u̯], appear in French in proper names such as Thibeault, and in place names such as Honvault,[47] Le Gault (in the department of Loir-et-Cher) and Le Gault-La Forêt (department of Marne).[48] Thus a similar preliminary stage of partial vocalization in claimed by some phoneticians to have

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[45]"An acoustic explanation of the sound shift [u̯] > [u] and [l] > [i]," p. 53.

[46]A New English Grammar (Oxford, 1892), p. 281.

[47]See Elcock, The Romance Languages, p. 425.

[48]See Rohlfs, From Latin to Old French, p. 234 and n. 424. Many other names of persons and places which appear to exhibit partial vocalization can be found, e.g. Renault, Rochefoucauld, Chatellerault, Gaultier, Saint-Saulve.

preceded the disappearance of [ɬ] in French. Maurice Grammont states that the vocalization of [ɬ] to [u̯] in French was preceded by a [uɬ] stage before contact of the tip of the tongue was lost. He cites supportive evidence from contemporary Romansh which preserves this preliminary stage in words such as kauɬ, auɬ, auɬter.[49] The notion of a stage of partial vocalization figures prominently in Fouché's discussion of French vocalization. Also citing examples from the contemporary speech of the Grisons area, Fouché concludes that since Latin au became aul in this dialect, a preconsonantal al must have been pronounced at one time as [auɬ]. He goes on to furnish additional examples from other Romance dialects of words whose present forms suggest a preliminary [uɬ] stage.[50] Going further afield and backwards in time, Fouché finds further examples of partial vocalization in Old Milanese and Old Venetian and in three isolated words appearing in documents of the second and third centuries. He concludes that the phenomenon of partial vocalization was not only more widespread in earlier times but may well have occurred in Latin itself:

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[49] Traité de phonétique, p. 207

[50] Phonétique historique du français, III, 856-57: "On a en effet en frioul. cosse < causa, oldi ~ golde < gaudere, olsa < ausare, polsa < pausare, etc., dans le Val de Gardena: ausses < ausas, aussei < *altiare, etc. . . . toutes formes qui postulent ul + cons."

> Cette aire était plus étendue autrefois puisqu'on note en v. milan (Bonvesin): oltro coldo, boldo (=baldo), etc., en v. vénitien: choldo (=caldo), smeroldo (=smeraldo) . . .
>
> Evidemment rien ne permet de faire remonter ce phénomène au latin ancien. Il faut cependant avouer qu'il y apparaît dès les premiers siècles de notre ère. On note en effet καυκουλατω pour calculato dans l'Edit de Dioclétien (301). Palcis, graphie inverse de paucis, est dans un texte de 345. Le Bobiensis (De republica de Ciceron), qui est peut-être du IIIe et même du IIe siècle, écrit immultabilis pour immutabilis, avec un l non-étymologique. Tous ces exemples, quoique de nature différente, sont d'accord pour attester que dès l'époque latine l + cons. pouvait déjà être prononcé par certains u̯l̥.[51]

In addition to citing evidence of partial vocalization in manuscripts and in other dialects, Fouché hypothesizes that a stage of partial vocalization is the only explanation for the conservation of final vowels in some French words. Since Latin a is normally the only final vowel conserved in French, instances of conservation of other final vowels must be explained on a phonetic basis or by appealing to analogy. Fouché reasons that in the case of a word like heaume, derived from Germanic helmu, or aune < alnu, a final vowel would not have remained unless l was still being pronounced during the time of final vowel loss in

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[51] Phonétique historique, III, 857.

Old French.[52] On the basis of such developments, he extends the occurrence of partial vocalization to all cases of preconsonantal l in French:

> Il est probable qu'au moment de la chute des voyelles finales, on prononçait en gallo-roman septentrional au̯ba, au̯to, au̯no, heu̯mo, etc. et non a̯ba, a̯to, a̯no, he̯mo, etc. Seule cette hypothèse permet d'expliquer la conservation de la finale dans aune, heume, etc.[53]

2.16 Complete Vocalization - Varying Rates

Complete vocalization occurs when the tongue tip fails to reach the teeth or gum ridge causing loss of laterality and thus total disappearance of an [l] sound.[54] Fouché suggests that while partial vocalization may have been general in the north of France for some centuries, complete vocalization was not achieved at the same time in all phonetic environments. He reasons that since vocalization implies a relaxation in articulation, it probably occurred earlier in unstressed syllables. Fouché cites the

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[52]For a phonotactic account of this type of development, see Klausenburger, French Prosodics and Phonotactics, p. 49: "Unstressed ultima vowels of paroxytones, except /a/, which became /ə/, disappeared in Gaul before the 9th century. However, if this loss entailed the formation of certain final clusters, the unstressed ultima vowel was either kept, or a so-called supporting vowel was added after these clusters, both in the phonetic shape /ə/ . . . . The disappearance of the unstressed final vowels of paroxytones created prepausal consonants and prepausal consonant clusters, most of which had never occurred in the Latin system."

[53]Phonétique historique, III, 856. See also II, 501-02.

[54]See para. 2.14 above for a more detailed description of loss of laterality.

earliest example accepted as indicative of the beginning of regular complete vocalization in Early French, the ninth century form Cansdoupont (< Campus de illo ponte), in which unstressed del has become dou.[55] Fouché also concludes that complete vocalization occurred earlier when an l + consonant group became final or implosive, following the loss of final vowels. Thus a form such as *aulto (< ALTU) having been reduced to *ault through the loss of final o, would completely vocalize to aut at an earlier date than a form such as *aultre (< ALTERUS) in which l + consonant was not final.[56] Moffatt remarks that the earliest examples of vocalization are without exception, groups of [a + l] + dental consonant.[57] Straka also asserts that vocalization occurs earliest after [a] and before dentals.[58]

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[55]Phonétique historique, III, 859. See also Mildred Pope, From Latin to Modern French, p. 155. For a discussion of the authenticity of the form Cansdoupont as an example of vocalization, see para. 3.5.4.

[56]Phonétique historique, III, 858. In phonotactic terms, the form *ault (< ALTU) ends in a prepausal cluster ([l] + voiceless consonant). But the form *aultre is prevented from developing a prepausal cluster through the development of the supporting vowel [ə], and instead contains a three-member sequence of consonants; [l] is therefore not followed by a consonant in the same syllable. For a discussion of the development of prepausal clusters and three-member sequences in Old French, see Klausenburger, French Prosodics and Phonotactics, pp. 55-64. See also para. 2.21 - 2.22 below.

[57]"A Physiological and Historical Study of Preconsonantal L," p. 198.

[58]According to Straka, the proximity of the most open vowel [a] augments the aperture of weakened [l] and hastens loss of contact of the tongue tip. See "Notes sur la vocalisation de l'l," pp. 25-26. See also Bourciez, Eléments de linguistique romane, p. 173.

2.17 Vocalization in French

The loss of preconsonantal [l] through weakened articulation in implosive position, and partial and complete vocalization as possible stages in the process, is a plausible description of the history of some Romance developments.[59] But the question of why such weakening occurred, failed to occur or only partially occurred in different Romance languages[60] is far from being solved. Acceptance of a common Vulgar Latin allophone of [l] in preconsonantal position compels some sort of explanation of its numerous modifications among the Neo-Latin languages, but a total explanation is as yet beyond reach. In the case of French, only a few tentative suggestions may be made to relate vocalization, as weakening of implosive [l], to other aspects of the evolution of the language.

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[59]Straka's suggestion of a stabilization of preconsonantal [l] at varying degrees of weakness (see para. 2.14) seems to accord with some Romance developments. For example, a comparison of the evolution of Latin ALTERU in Catalan [aɬtrə], Rhaeto-Romance [auɬtrə], and Provençal [autrə], illustrates stabilization at stages of dark [ɬ], partial vocalization, and complete vocalization, respectively. Perhaps the same stages occurred in French in the evolution to modern autre [otrə].

[60]For example, Italian exhibits a clear [l] in preconsonantal position which indicates that weakening either failed to occur or was later halted and reversed (see para. 2.14). In French, on the other hand, weakening occurred to the point of vocalization before all consonants. Other Romance languages show partial weakening (e.g. Catalan) or irregular weakening (e.g. Spanish).

2.18 Weakening of Implosives in French

If a dark [ɬ] allophone existed in preconsonantal position in Vulgar Latin, vocalization must have been subsequently inhibited in areas now exhibiting a clear preconsonantal [l] or partial vocalization. Conversely, weakening and disappearance of [l] must have been somehow encouraged in French. If vocalization is viewed in terms of a progressively weakening articulation of implosive [l] it is appropriate to look for other manifestations of similar consonantal weakening in the evolution of French. Straka sees vocalization of preconsonantal [l] in French as one of several incidents of weakening and disappearance of implosive consonants which marked the early history of the language:

> Au VII^{e} siècle . . . d'autres consonnes implosives se sont également affaiblies, voire amuies, dans *covde, *defte (DEBITA), *deift, *nieps (NEPOS) etc., ainsi que dans RUPTA > *ropte > rote 'route', SEPTE *sept > set 'sept', etc.; de même, c'est à cette époque seulement, et pour les mêmes raisons d'ordre chronologique, que les consonnes geminées se sont simplifiées.[61]

Thus disappearance of preconsonantal [l] is not an isolated incident in the history of implosive consonants in Old French but may be viewed as one of several such losses in the formative period of the language.

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[61]"Contribution à la description et à l'histoire des consonnes L," p. 304.

2.19 Strata Influences

Weakening and loss of implosive consonants in Old French is often viewed as a natural consequence of an ill-defined, generalized "lax" articulation in the pronunciation of Latin in Gaul and an appeal is thus made to substratum influences to account for this.[62] But such appeals remain speculative since substratum influences are too imprecisely known to be of real explanatory value.[63] On the other hand, Frankish superstratum influence is held by some to be responsible to some extent for the strong expiratory stress of Old French.[64] Whether or not superstratum influence played a role in creating the heavy stress accent, the latter has been linked with the pronounced tendency towards syncope in the early history of French.[65] There is no doubt but that the extensive occurrence of

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[62]See for example G. Straka, "Notes sur la vocalisation de l'l," p. 27. Straka cites A. Dauzat, a proponent of the substratum theory, Essai de géographie linguistique, (Paris, 1938), III, 87-89.

[63]Vague references to the negligent pronunciation of Latin by unlettered barbarians, as for example in Moffatt, "A Physiological and Historical Study of Preconsonantal L," p. 193, are not instructive in accounting for systematic developments.

[64]See Walther von Wartburg, Evolution et structure de la langue française, 8e ed. (Berne, 1967), pp. 65-66, and Pope, From Latin to Modern French, p. 15. But for a different account of the heavy stress accent, see L'udevit Novák, "De la Phonologie historique romane: La Quantité et l'accent," Charisteria G. Mathesio oblata (Prague, 1932), pp. 45-47.

[65]See Ewert, The French Language, pp. 29-35, and Pope, From Latin to Modern French, p. 112.

syncope and apocope resulted in a proliferation of the occurrence of implosive consonants, including [l] (COLLOCAT > colche > couche, SULPHUR > solfre > soufre).

2.20 A Phonotactic View of Vocalization

Since the implosive position of [l] is pertinent to its vocalization in French, vocalization appears to be a feature in the evolution of French which may profitably be analyzed in phonotactic terms. Klausenburger points out that the occurrence of syncope and apocope caused a change in the accentual pattern of Gallo-Roman[66] and a subsequent re-organization of its phonotactic structure:

> . . . apocope I (loss of all final vowels except /a/) and apocope II (loss of final /ə/) resulted in a definite restructuring of the existing system. . . . apocope I created many prepausal clusters unknown to Latin; apocope II brought about prepausal clusters which differentiate MF from OF.[67]

According to Klausenburger's analysis, the occurrence of /l/ in a two-member prepausal cluster (/l/ + voiceless consonant, as in colp, salt, chevals) is only one of a group of five such prepausal clusters in Old French. Other prepausal clusters of /r/, /s/, /n/ or /m/ + voiceless consonant also occur (corp, cresp, cent, champ). Similarly,

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[66] French Prosodics and Phonotactics, p. 11.

[67] Ibid., p. 43.

/l/ may occur as the first member of a three-member prepausal cluster (colps, chevalst) and as such forms part of a group of three-member clusters consisting of two consonants + /s/ or /t/ (corps, cresps, temps, serft, dornt).[68] The history of these clusters can be formulated as follows:

> All two-member prepausal clusters with syllable-final /l/, /m/, /n/, /s/ and /z/ were lost. Clusters containing /r/ kept this syllable-final /r/. . . .
> All three-member prepausal clusters first underwent reduction to two-member prepausal clusters by losing the middle consonant. . . . The resulting two-member prepausal clusters evolved in the manner outlined above.[69]

2.21 Preconsonantal [l] in a Consonant Sequence

Klausenburger also makes a phonotactic analysis of consonant sequences in Old French. He lists preconsonantal /l/, in such words as talpe, solder, alge, among a group of six sequences formed by /r/ /l/, /n/, /m/, /z/ or /s/ plus consonant. Three-member sequences are composed of two consonants plus /r/ or /l/ (aspre, esplendeur). In this case preconsonantal /l/ is found as the first member of sequences of two consonants plus /r/ (altre, moldre, sepulcre).[70] The subsequent development of such sequences is as follows:

> All two-member sequences with syllable-final /l/, /m/, /n/, /s/, and /z/ were

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[68] French Prosodics and Phonotactics, pp. 57-58.

[69] Ibid., pp. 61-62.

[70] Ibid., p. 59.

> reduced to single consonants. . . .
> All three-member sequences with syllable-final /l/, /m/, /n/, /s/ and /z/ have been transformed into two-member postpausal clusters in MF.[71]

2.22 Open Syllabicity

Klausenburger's analysis of Old French consonant clusters and sequences indicates that the loss (or vocalization) of syllable-final /l/ may be included in a group of similar changes which were of fundamental importance to the phonotactic evolution of French. He concludes that "the loss of syllable-final /l/, /n/, /m/, /s/, and /z/ has totally determined the restructuring of the phonotactic system of consonant clusters and sequences of OF." Moreoever, Klausenburger discerns a "major structural tendency" in these changes. His analysis of the occurrence of clusters and sequences in Old French reveals that two thirds of the closed syllables found in prepausal clusters and sequences of Old French have been opened in their evolution into Modern French. Hence the result of these changes was a move towards open syllabicity.[72] If this phonotactic analysis is accepted, it is possible to view vocalization in French as one of a number of changes contributing to open syllabicity in the development of the language.

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[71] French Prosodics and Phonotactics, p. 62.

[72] Loc. cit. This tendency towards open syllabicity is mentioned by Klausenburger in connection with other phonotactic developments, such as nasalization (p. 8) and the development of "glide" consonants (p. 47) as in MOLERE > moldre.

III. EVIDENCE OF VOCALIZATION IN OLD FRENCH

3.1 Evidence of Regular Vocalization

Leaving aside the more contentious problem of dating the first incipient tendencies towards vocalization, one yet finds a variety of statements specifying the date of regular and complete vocalization in Old French. In general, the process is ascribed to the eleventh or twelfth centuries or to both, although isolated earlier examples have been found. For the most part, examination of the evidence provided in medieval langue d'oïl manuscripts has formed the basis of assumptions about the date of vocalization. Interpretation of such evidence is fraught with many problems not the least of which are the scarcity of written records, the difficulty of assessing what linguistic realities are reflected by scribal practices and confusion over dialects.

3.2 Lack of Written Records

If the eleventh and twelfth centuries are in fact the periods pertinent to complete and regular vocalization, the problem of finding relevant manuscripts is particularly acute. From the time of the Strasbourg Oaths (842) to the reign of St. Louis (1226 - 1270) there is a paucity of documents representing the ancestral forms of Modern French, and the eleventh century is especially barren in this respect. The first two manuscripts in the vernacular, the Oaths and the poems attached to the Liber Glossarum of Clermont-Ferrand (circa 1000) cannot with certainty be assigned to any known

dialectal area. According to the analysis of C.A. Robson, each contains a mixture of phonological features and flexional forms which apparently intends to represent a Northern type of French but does not belong to any specific dialect area. Robson concludes that the language of these early manuscripts represents an unlocalized, artificial language reflecting an interregional scribal practice.[1] Until the thirteenth century, the only other written records which provide evidence for the development of French are the insular manuscripts of the twelfth century and a small body of Picard literary texts beginning with the Sainte Eulalie of the late ninth century.[2]

3.3 Scribal Practices

Twelfth century manuscripts in general retain preconsonantal l and it is not until after 1200 that u is regularly substituted in spelling.[3] Following regular vocalization of preconsonantal l, some sort of system of written forms had to be devised by scribes to consistently represent the new diphthongs formed by the combination of u with the preceding vowel. When such a system does appear in the thirteenth century, it is difficult to know to what extent the forms represent the actual phonetic history of

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[1] "Literary Language, Spoken Dialect and the Phonological Problem in Old French," Transactions of the Phonological Society (Oxford, 1955), pp. 122-125.

[2] Ibid., p. 125.

[3] Ibid., p. 143.

Modern French or conversely, to what extent they reflect a formalized scribal tradition influenced by Picard usage or interregional monastic scribal practices. Robson posits two main scribal traditions originating in the ninth or tenth centuries. One of these is localizable in Picardy and the other is the interregional tradition, probably of monastic origin, which was carried over to the insular manuscripts following the Norman conquest. Robson claims that a modified form of the Picard usage eventually triumphed during the reign of Philip-Augustus and was later accepted by the capital.[4] However, by the time that a standardized written norm was established in the thirteenth century, the period of vocalization was complete and it is still a puzzle to know exactly what earlier linguistic history is reflected by spellings.

3.4 Francian and the Dialect Problem

The gap in written records relating to the period in which vocalization is alleged to have occurred is not only one of chronology but also of localization. Francian is the postulated dialect of the Ile-de-France area surrounding Paris and is often named as the ancestor of the Old French of the thirteenth century. However Robson claims that Francian is only a hypothetical dialect

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4"Literary Language, Spoken Dialect and the Phonological Problem in Old French," pp. 130-32.

not directly attested in any surviving writing[5] and that the use of the term "Ile-de-France" to mean the birthplace of Modern French is anachronistic, apparently because during the formative period before the thirteenth century, "the precise features of the central or Parisian speech . . . played little part."[6] The question of dialects in pre-thirteenth century France is far from clear and the first manuscripts which contain enough examples of vocalized l to demonstrate the workings of the new system of diphthongs do not come from the Parisian area.

3.5.1 Isolated Spellings

Although u is not generally substituted for l in spellings until after 1200, many isolated spellings from earlier times indicate traces of possible vocalization in several localities. The earliest examples quoted by Bourciez, Fouché and others go as far back as the Empire and continue through the works of Sidoine Apollinaire (fifth century), Merovingian documents of the seventh century and spellings of Germanic names in Latin documents of the tenth century.[7] However Fouché dismisses examples before the ninth century as cases of

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[5]"Literary Language, Spoken Dialect and the Phonological Problem in Old French," p. 122.

[6]Ibid., p. 127.

[7]For a discussion of several early examples, see Fouché, Phonétique historique du français, III, 858-59. See also para. 2.15 in which some of these examples are quoted. Further early examples are mentioned by Bourciez, Précis historique de phonétique française, p. 187.

irregular, partial vocalization, dissimilation, acoustic confusion and analogy.[8] Moffatt discusses a number of these early examples together with the sources cited for each and also concludes that most are unreliable as proofs of early vocalization.[9]

3.5.2 "Baudomerus"

The name Baldomerus occurs in a charter of 652, while the spelling Baudomerus appears one year later in 653.[10] According to Moffatt, Kolovrat cites these examples as proof of the beginning of vocalization in Old French.[11] However Moffatt finds this example unacceptable for a number of reasons. He points out that the charter cited by Kolovrat is a late forgery for which an original may never have existed. Furthermore, the name may have come from either of two distinct Germanic roots, Bald-, or Baud-, in which case the spelling Baudomerus may have nothing whatever to do with vocalization in French.[12] The same history may apply to other Germanic names which are cited as indications of early

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[8]Phonétique historique, III, 859.

[9]"A Physiological and Historical Study of Preconsonantal L in the Romance Languages," pp. 109-11.

[10]Ibid., p. 109.

[11]Loc. cit. Moffatt cites Kolovrat's "Etude sur la vocalisation de la consonne 'l' dans les langues romanes," pp. 135-36.

[12]"A Physiological and Historical Study of Preconsonantal L," p. 110.

vocalization, as for example, Chariobaldus, Chariobaudus, attributed to the works of Sidoine Apolliniare.[13]

3.5.3 "Saocitho"

A more frequently quoted example of seventh century vocalization is the form Saocitho, said to be the reflex of Salicetum.[14] This word occurs in a Merovingian document of 677-678.[15] Moffatt raises the question of whether Saocitho is in fact derived from Salicetum. He claims that Salicetum does not appear as a proper name in any charter which he has examined and that the form Saocitho may come instead from Sancitus. Since the unvocalized form Salcido (> modern Saussay) is found in a tenth century passage of the Polyptique of St. Irmion and a form Sauceis, possibly from Sancitus, occurs in 1164, Moffatt concludes that Saocitho is a doubtful example of seventh century vocalization.[16]

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[13]See Straka, "Contribution à la description et à l'histoire des consonnes L,", p. 301.

[14]See for example, Meyer-Lübke, Historische Grammatik der französischen Sprache, 3rd ed., (Heidelberg, 1908), I, 134; Bourciez, Précis historique de phonétique française, p. 187, and Straka, "Contribution à la description et à l'histoire des consonnes L,", p. 304.

[15]See Moffatt, "A Physiological and Historical Study of Preconsonantal L," p. 103.

[16]Ibid., p. 104.

3.5.4 "Cansdoupont"

While discounting earlier isolated examples of sporadic vocalization, both Fouché and Pope accept the ninth century form Cansdoupont (for Campus de illo ponte) as an instance of the beginning of regular vocalization in unstressed syllables.[17] However even this example may be suspect. Moffatt points out that the word was first cited by Meyer-Lübke from the Cartulary of Redon of 832-840, but that an exact page reference does not accompany the citation. Moffatt thus made a careful search of the cartularies of Redon but failed to find any such form. However he did find the spelling Camdonpont for the same date and place in the General Index and the form Camdoupont in the Chronological Index of the cartulary.[18] He concludes that the latter spelling, Camdoupont, is a typographical error and that the word is not derived from a form containing l.[19]

3.5.5 Ninth and Tenth Century Names

Moffatt has collected a number of proper names from cartularies of the late ninth and tenth centuries which are possible examples of vocalization. Among others, Moffatt cites Girau (889) from Beziers,

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[17]Fouché, Phonétique historique, III, 859; Pope, From Latin to Modern French, p. 155.

[18]Aurelien de Courson, Cartulaire de l'Abbaye de Redon en Bretagne (Paris, 1863), p. 95.

[19]"A Physiological and Historical Study of Preconsonantal L," pp. 104-05. For another view regarding such spellings as Camdonpont ~ Camdoupont see Bernard Rochet, "The Formation and the Evolution of the French Nasal Vowels: A Functional-Structural Account." Unpublished doctoral dissertation (University of Alberta, Edmonton, 1970), pp. 110-13.

Gerao (921) from Nimes, Restaudi (977) from Angers and Calma, Cauma (980) from Poitou.[20] Whether or not these spellings are irrefutable examples of vocalization, it may be seen that none (or any of Moffatt's other examples from the cartularies), come from any locality near the Ile-de-France area and may thus reflect Provençal or other dialectal developments, rather than ancestral forms of Modern French. It is difficult to decide how much credence should be lent to any of these isolated early examples. But whether they represent capricious deviations in spelling or sporadic indications of a general tendency, they do not by themselves form the basis for postulating regular and systematic vocalization at such early dates.

3.6 The Evidence of Assonance

Ferdinand Brunot claims that l had not vocalized in the eleventh century and supports this contention by citing the evidence of assonating vowels in poems of this period:

> En francien, au XI^{e} siècle, l n'est pas encore vocalisée, et l'a entravé par cette l + consonne assonne toujours avec a pur. Dans Rol. (VCIII): haltes, chevalchent, alques, assonnent avec a de sages, vasselage, armes, bataille, deignasses.[21]

The basis of his argument appears to be that the occurrence of assonance (of a + l with a before other consonants) precludes the conclusion that vocalization has taken place. Brunot fixes the

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[20] "A Physiological and Historical Study of Preconsonantal L," pp. 112-14.

[21] Histoire de la langue française, I, Des origines a 1900 (Paris, 1924), p. 158.

period of vocalization in the twelfth century because of this. However he seems to make a baffling refutation of his own line of reasoning when he goes on to explain how assonance may continue to occur after the vocalization of l:

> . . . c'est au XII^{e} siècle que dans le dialecte de l'Ile de France, l s'est vocalisée devant une consonne, et a fait diphtongue avec les voyelles. Au début la voyelle portant l'accent était l'élément prépondérant de la diphtongue, et c'est pour cela qu'on trouve assez longtemps cette voyelle assonant avec la même voyelle non suivie de u.[22]

3.7 Arguments Based on Assonance Inconclusive

If it is true, as Brunot suggests, that because of the stress on the tonic [a] preceding [l], assonance is not at first affected by the change of [l] to [u], a chronology based on assonating poems is not likely to be very precise. This point is confirmed by Pope who asserts that the articulation of the vowel preceding [l] was not immediately affected by vocalization. In fact, one would not expect assonance of [a + l] (or [a + u]) with [a] + another sound to be precluded until the diphthong [au] moved towards monophthongization. Thus, as Pope points out, tonic vowels followed by vocalizing consonants may continue to assonate with tonic vowels followed by other consonants, and the evidence afforded by assonance is therefore inconclusive.[23]

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[22]Histoire de la langue française, I, 158.

[23]From Latin to Modern French, p. 155.

3.8 Conservative Nature of Spelling

Both Pope and Brunot cite the same examples of assonance from the twelfth century chanson de geste, Le Couronnement de Louis.[24] In all these examples, preconsonantal l continues to appear in the orthography. Those who claim that vocalization was complete by this time, or even before, are aware of this problem and have attributed it to the conservative nature of spelling. Rohlfs, for example, declares that l vocalized to u from approximately the middle of the twelfth century but suggests that its continued appearance in the manuscripts of this time may have been due to traditional spelling.[25] Both Bourciez and Fouché insist that vocalization was complete by 1100 and the latter points out that such an early date is compatible with the written evidence which continues to show l, because of the time it would take for the evolution of resulting diphthongs to have an impact on writing.[26]

3.9 Evidence of Regular Vocalization

The first rhymes attesting to vocalization of l come from the middle of the twelfth century from Le Mystère d'Adam, attributed to

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[24] Pope, From Latin to Modern French, p. 155, and Brunot, Histoire de la langue française, I, 158.

[25] From Vulgar Latin to Old French, p. 96.

[26] Phonétique historique du français, III, 858-59.

the Loire valley, from the works of Wace who was born on Jersey about 1120,[27] and from Chrétien de Troyes. Pope quotes ascute (AUSCULTAT) rhyming with rute from Le Mystère d'Adam and tout (TŎLLIT) rhyming with plout from Wace.[28] In addition, diphthongs such as -eals and -eaus (< -ELLUS, -ELLOS) appear in Wace.[29] Several writers have interpreted this evidence to indicate that the vocalization process must have been complete by 1100. Bourciez claims that vocalization was completed "sans conditions" (which may mean in all phonetic contexts) in the north from the eleventh century.[30] Fouché explains that the evidence of spellings and rhymes in manuscripts after 1150 implies that vocalization had taken place at some time in the previous century. For example, the graphies -eals, -eaus in the works of Wace indicate a former stage -els, -eus. Because of the interval between vocalization and further reduction or evolution of the resulting diphthongs and the time it would take for these changes to appear in writing, Fouché reasons that vocalization was probably complete by 1100.[31]

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[27] I.D. Arnold et M.M. Pelan, La Partie arthurienne du Roman de Brut (Paris, 1962), p. 18.

[28] From Latin to Modern French, p. 155.

[29] For these and further examples, see Fouché, Phonétique historique, III, 858.

[30] Eléments de linguistique romane, p. 295.

[31] Loc. cit.

3.10 Thirteenth Century Evidence

The first manuscripts which contain enough examples of vocalized l to provide evidence of a system of written forms representing the new -u diphthongs come from the thirteenth century. The earliest of these is the rent-roll of the Marchiennes abbey (circa 1200) which is part of a collection of deeds and conveyances written before 1226 in Flanders and conserved in the original.[32] Four distinctive digraphs were used in the rent-roll: au, iau, eu and iu.[33] Robson compares the distribution of these digraphs with two Champenois manuscripts, the Coutumes et Peages de Sens (early thirteenth century) and the Guiot copy of the works of Chrétien de Troyes (circa 1220) and with a late thirteenth century Picard manuscript of Aucassin et Nicolette. In the latter two documents, five functionally distinctive digraphs were used: au, iau, eu i(e)u, ou. However, Robson's analysis of all four manuscripts indicates a different distribution of the five u-diphthongs according to the etymological relationships of the words in which they occur. Two phonological correlations emerge, one representing Picard dialect and the other, Champenois. Robson points out that some of the forms in the four manuscripts indicate that levelling of the diphthongs was already in progress. The form iau,

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[32]See Maurits Gysseling, "Les plus anciens textes français non-littéraires en Belgique et dans le Nord de la France," Scriptorium 3 (1949), pp. 190-210.

[33]See Robson, "Literary Language, Spoken Dialect and the Phonological Problem in Old French," pp. 143-49.

replacing earlier eau, suggests a pronunciation [j + au] in both dialects. Even in the earliest manuscript, the Marchiennes rent-roll, Robson claims that such words as fourment and poulles contain digraphs which are back-spellings representing the monophthong [u] deriving from an original Latin ŭ.[34] Many other thirteenth century digraphs may represent vocalization diphthongs which had also moved towards monophthongization. Nevertheless it is possible to retrace the earlier history of vocalization from the digraphs which appear at this time and to posit the diphthongs or triphthongs resulting from vocalization of [l] after each vowel in the system. The following chapter enumerates the diphthongs or triphthongs which were produced by vocalization after each of the vowels and the subsequent evolution of each.

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[34]"The Phonological Problem in Old French," p. 149. See also Chapter V below.

IV. THE DIPHTHONGS

4.1 Loss of Laterality After All Vowels

Preconsonantal [l] lost its laterality after all vowels in French. But a variety of results occurred according to the timbre of the preceding vowel. Following the Classical Latin high vowels ī and ū, laterality was lost without changing the quality of the preceding vowel or leaving any trace of a diphthongal u. Whether preconsonantal [l] vocalized to a [u] which was subsequently absorbed, or whether [l] was simply effaced in these contexts, is a debatable point. Following all other vowels, a diphthongal [u] from [l] in the majority of cases appears to have changed the quality of the preceding vowel, resulting eventually in monophthongization to three phonemes, /u/, /ö/ and /o/. The variety of diphthongs and triphthongs resulting from vocalization was abundant in French because of combinations of diphthongal [u] (from vocalized [l]) with diphthongized vowels in previously free syllables (PALOS > pieux) as well as combinations with nondiphthongized vowels in checked syllables (ALBA > aube), and because of the development of so-called vocalic "glide" elements, as in BELLUS > bels > beus > beaus.

4.2 Tabulated Chronology of Vocalization Diphthongs

The following table attempts to show an approximate chronology of vocalization and the further phonetic evolution of the resultant diphthongs with respect to one another and with respect to some related developments of the same period. The forms representing the stages in the evolution of the diphthongs are based largely on the works of Fouché and Pope[1] except in those instances discussed in the following paragraphs. Underlined forms on the table are those for which Fouché has postulated a date or an approximate date. The chronology proposed by Pope generally concurs with that of Fouché, or is frequently a few decades later, but never earlier. The forms not underlined on the chart have been placed in accordance with Fouché's theories but are somewhat arbitrarily fixed and not intended to represent precise dates.

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[1] Fouché, Phonétique historique du français, Vols. II and III; Pope, From Latin to Modern French.

Classical Latin (vowel + [l])	Gallo-Roman	800	900	1000	1100	1200	1300	Examples
ī	i↓	(iū̆ > iŭ̯ + s > ii̯ > i)						FĪLIUS > fils
ĭ, ē	e̯↓			é̯u̯	ŏu̯ ŏ			ĬLLOS > eux
ĕ] checked	e̯↓~e̯a̯↓			é̯u̯ éa̯u̯	eáu̯		iáu̯	BĔLLUS > beaux
ĕ[tonic free	ie↓			íeu̯	jǒu̯ jŏ			CAELUS > cieux
ă[tonic free	e↓ ie↓			íeu̯	jǒu̯ jŏ			PALOS > pieux
ă checked	a↓			áu̯ áu̯	áo̯ áo̯		o̯ o̯	CALĬDUS > chaud ALBA > aube
ŏ[tonic free	ue↓			éu̯ íeu̯		õ jŏ		VŎLET > veut DŎLET > dieut
ŏ] checked	o̯↓			ó̯u̯ (o̯u̯)	uu̯ u̯			CŎLLOCAT > couche
ŭ, ō	o̯↓			ó̯u̯	uu̯ u̯			CŭLPA > coupe
ū	u↓ uu̯	u	ü					PŪLICE > puce
Related Developments in the Vowel System								
ū		u	ü					MŪRUM > mur
ŏ[tonic free	úo	úo ue	üe	ü̯o̯	ü̯o̯ õ			BŎVEM > boeuf
ŭ, ō tonic free	óu̯		óü óü̯		ö			FLŌRE > fleur
ĭ, ē tonic free	ei	oi	oi			o̯e ue̯		HABERE > avoir

4.3 Effacement of Preconsonantal [l]

Fouché suggests that in certain phonetic contexts [l] was partially vocalized and then simply effaced. When final vowels e and o disappeared, words such as alto (< ALTU) became partially vocalized to *ault. When [l] occurred in this position before an implosive group or before a final consonant, it simply dropped out, according to Fouché, and did not vocalize. However, Fouché does not explain the difference in articulatory terms, between the disappearance of [l] (after partial vocalization) and complete vocalization of [l], which itself implies merely the disappearance of laterality. His argument does however lead to the further conclusion that vocalization or disappearance of [l] was earlier before an implosive and that it was earliest of all before a final affricate, [ts], as in *faults (< FALCE) > fauts.[2] If this is really the case, it serves well as an argument for postulating effacement of [l] after the high vowel, i.

4.4 Effacement of Preconsonantal [l] After ī

The reflexes of words in which preconsonantal [l] followed the high front vowel, ī, show no trace of a [u] from vocalization. Hence it is often argued that [l] in this particular context did not undergo either partial or complete vocalization, but was merely effaced or assimilated to the preceding [ī].[3] However, the few words which

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[2] Phonétique historique, III, 858.

[3] See Pope, From Latin to Modern French, p. 154.

represent preconsonantal [l] after ī appear to fall into a special category. In all instances, it is a "secondary" previously intervocalic, palatal [l̰] brought into preconsonantal position by syncopation of an unstressed vowel, as in FĪLIUS > fils. Similarly nearly all the words illustrating effacement of preconsonantal [l] after ī end in [l̰s]. Fouché explains that [l̰] before [s] develops into the group [l̰ts] (or [l̰] + palatal affricate). According to Fouché, the palatal [l̰] caught in this position between the high front vowel and a palatal affricate is of short duration and weak articulation and is thus easily assimilated to the preceding [i] and thus simply disappears: FILIUS > *filts > fits, *LILIOS > lilts > lits (spelled fiz and liz in Old French).

4.5 Vocalization and Delabialization After ī

An alternative development of preconsonantal [l] after ī is described by Fouché in an earlier chapter of his book.[4] Using the same words as examples, he postulates vocalization after ī resulting in the diphthong [iu̯]. At the moment of palatalization of [u] to [ü] in the system, the diphthongal [u̯] also palatalizes.

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[4]Phonétique historique, III, 315.

However Fouché claims that this change is "conditionné" and occurs because of the assimilatory influence of the preceding [i].[5] When the new diphthong [iü] was followed by a final [-s], the [-ü] delabialized to [i], resulting in the form [ii] which quickly reduced to [i]: GENTĪLIS > gentils > *gentius > gentiüs > gentis, FĪLIUS > filz > *fiuz > *fiüz > fiz. Although Fouché specifically claims in this passage to be describing Francian developments, the results in standard French do not suggest vocalization (since no direct evidence of a dipthongal [u] appears after C.L. high ī), and the only attesting graphies of iu (representing ī + l) come from Flanders, Picardy and some Western dialect areas. Pope explains that the variety of results indicates a variety of [l] sounds in preconsonantal position among the Northern dialects.[6] In those dialects in which iu appears, [l] + consonant apparently depalatalized, darkened to [ɫ] and then vocalized.

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[5]Presumably some sort of assimilatory influence must be posited here as diphthongal [u] did not palatalize in some vocalization dipthongs, such as au, eau and ou.

[6]From Latin to Modern French, pp. 153, 155. See also Moffatt, "A Physiological and Historical Study of Preconsonantal L in the Romance Languages," pp. 143-45.

4.6 Vocalization After C.L. ū

Pope states that preconsonantal [l] vocalized to [u] after the high labial [ü] and then "merged in the preceding vowel and thus disappeared."[7] This implies that vocalization occurred after the systematic palatalization of ū to [ü]. Fouché, however, argues the opposite, reverses the chronology, and insists that complete vocalization of ū + [ɬ] + consonant occurred before the palatalization of ū to [ü]. The basis for his argument is that if palatalization of ū had preceded vocalization, the results would be incompatible with modern reflexes of ū + [l]. Taking the word PŪLĪCE as an example, he maintains that a form [*püu̯ɬtse] would have undergone vocalization to become [*püu̯tse], and that the latter would have subsequently differentiated to piutse as in Old Provençal.[8] Since the modern reflex, puce, shows no sign of having passed through a stage [*piütse], Fouché reasons that vocalization in this case must have preceded the

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[7] From Latin to Modern French, p. 154. See also Posner, Consonantal Dissimilation in the Romance Languages, p. 129.

[8] It is difficult to understand the relevance of Old Provençal developments to this argument. The question of whether palatalization of ū preceded vocalization of [l] is taken up again in Chapter V.

stage [ü]. As the change of ū to [ü] is placed by Fouché at some point in the late eighth century and before the end of the ninth, he concludes that vocalization of ū + [l] must have occurred at least as early as the eighth century.[9]

4.7 Effacement after ū

As in the case of preconsonantal [l] following high ī, the few words in which ū + [l] + consonant are found seem to fall into a special category in that it is always a case of ū + [l] + [s], as in PŪLICE, CŪLUS, NŪLLUS. There is in the form PŪLICE the sequence [l] + palatal affricate [ts]. If palatalization of ū occurred first, then it seems reasonable to assume that in the stage [*püɬtse], [ɬ] could have been simply effaced between the palatal vowel and the palatal affricate in much the same way as it may have been effaced after ī, as in FĪLIUS > fits. Whether it is a question of effacement after [ü], or vocalization and merger after [ü], both these accounts have the advantage of placing the disappearance of [l] after the palatalization of ū, and thus chronologically closer to the presumed period of vocalization when u begins to replace l in spelling.

4.8 Vocalization Following C.L. ȳ and ē

In the case of all except the highest vowels, ī and ū, the vocalization of a following preconsonantal [l] to [u] is attested in the writing and there can be no question that the evolution of the

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[9] Phonétique historique, III, 857-58.

front vowels in this position was altered. There seems to be no reason to dispute the notion that a Latin ĭ and ē fell together as closed e and developed identically in French. The diphthong [eu] was formed by the coalescence of ĭ, ē as [e] with the following:

a. "primary" preconsonantal [l], e.g. *gĭlda > geude, *fēltrare > feutrer;

b. "secondary" preconsonantal [l], meaning intervocalic [-l-] brought into preconsonantal position through syncopation of unstressed vowels, e.g. ĭllos > eus, dēlicātu > deugie.

c. former palatal [l̩] made preconsonantal through syncopation of unstressed vowels, e.g. *parĭculos *parelø̆z > pareuz.[10]

4.9 Evolution of [eu]

Fouché explains that [e̯u] became [ö̯u] in Francian through rounding by partial assimilation of the first element of the diphthong with the second. The phase [ö̯u] then monophthongized to [õ] towards the end of the twelfth century.[11] Pope suggests the same stages: "The first element of the dipthong eu was rounded to ö in the course of the twelfth century and öu monophthongized to õ in the course of the later twelfth and thirteenth centuries."[12] The

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[10] Phonétique historique, II, 303.

[11] Loc. cit.

[12] From Latin to Modern French, p. 201.

same evolution is proposed by Pope for the diphthong [ou] resulting from the paradigmatic diphthongization of tonic free ō and ŭ.[13] This diphthong is presumed by some to have changed from [ou] to [eu] before the end of the eleventh century and to have subsequently become differentiated to [ŏu] and simplified to [ŏ] (FLŌRE > fleur > fleur).[14] If this is an accurate interpretation of what actually happened, it may be assumed that [eu] from both sources existed at the same time and changed simultaneously to [ŏu]. However another account of the evolution of paradigmatic [ou] is discussed in detail in Chapter V.

4.10 Vocalization Following C.L. Checked ĕ

Although all vowels must be checked by [l] + consonant at the moment of vocalization, syncopation which brought a previously intervocalic [-l-] into preconsonantal position did not occur until after the diphthongization of the lower-mid vowels in tonic free position. Therefore an original [ĕ + l] could become either [iel̩] or [el̩] according to whether the preceding vowel had been in free or checked position, and two different diphthongs resulted from vocalization: [iel̩] or [el̩]. However a very special development occurred in the case of checked ĕ. When vocalization of [l̩] occurred, spellings attest a tripthong [eal̩] which, according to the testimony

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[13] From Latin to Modern French, pp. 105, 201.

[14] Loc. cit.

of some grammarians of the period, may not have monophthongized until the sixteenth century.[15] Fouché claims that the triphthong was preceded by a stage [ę + ɨ] which became [ęu̯] and that the first element then became segmented to [ęa], producing the triphthong [ęau̯].[16] Pope suggests the same order of developments in claiming that the combination of [ę + u̯] "was facilitated by the development of a vocalic glide, a after e."[17] Thus BĔLLUS > bels beus > beaus. However Brunot's explanation of the triphthong suggests quite a different chronological order. Rather than placing the introduction of the so-called "glide" element, [a], as simultaneous with or subsequent to vocalization, he suggests that its development was an earlier occurrence in French between [e] and preconsonantal [ɨ]. Hence he would postulate the evolution bels > beals > beaus.[18] Robson's tables of spellings from insular manuscripts between A.D. 1000 and A.D. 1214 show the spellings el, eal, eu and eau,[19] and he posits the Gallo-Roman form e^{a}l.[20] None of

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[15] Phonétique historique, II, 337. See also Charles Thurot, De la prononciation française depuis le commencement du XVIe siècle, I, (Slatkine Reprints, Geneva, 1966) 434-41.

[16] Phonétique historique, II, 318. See also Bourciez, Elements de linguistique romane, pp. 295-96.

[17] From Latin to Modern French, p. 154.

[18] Histoire de la langue française, 158.

[19] "Literary Language, Spoken Dialect and the Phonological Problem in Old French," p. 133

[20] Ibid., p. 179.

these authors has suggested a phonological reason for the insertion of the [a] element at whatever stage it first occurred.

4.11 Evolution of the Triphthong [eau]

At first the triphthong [eau] carried the stress on its first element which had been the stressed vowel in Latin, e.g. BĔLLUS > béaus, *CASTĔLLUS > chastéaus. However the rhymes of Marie de France after 1150 show that by this time the stress had shifted to the more open middle element, [eáu].[21] In the Picard and Champenois manuscripts of the thirteenth century discussed by Robson,[22] the form iau appears, showing closure of the now unstressed first element. The spelling iau also appears in the Parisian Rôles de Taille of the end of the thirteenth and beginning of the fourteenth centuries and at the same time Paris street names ending in -iau appear on maps.[23] Simplification of the triphthong [iáu] would normally result in the form [jo] which Fouché claims is in fact the most frequent reflex among the Northern French dialects. Since the modern French reflex of the triphthong is not [jo], but merely [o] , a pronunciation which appears to date from the sixteenth century, Fouché considers that the

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[21] beals [beáus] is rhymed with reials [reiáus] and chevals [ʃeváus]. See Fouché, Phonétique historique, II, 336.

[22] "Literary Language, Spoken Dialect and the Phonological Problem in Old French," pp. 143-49. See also para. 3.10.

[23] See Fouché, Phonétique historique, II, 336.

only explanation is learned influence. According to his description, the pronunciation [iau] was rejected as rustic and dialectal; [eau] was restored but after the simplification of [au] to [o], went through the progression [eó > ŏó > o].[24]

4.12 Vocalization Following C.L. Tonic Free ĕ

Vocalization following Latin tonic free ĕ necessarily implies a basis of é + [l] + vowel and could only occur when syncopation of the vowel brought [l] into preconsonantal position. Since such syncopation did not occur in time to check the ĕ and inhibit paradigmatic diphthongization, by the vocalization period there existed the form [ieɬ]. Thus celos (< CAELOS) must have become cielos before syncopation to cielø̆s. This situation did not arise in the case of tonic free ē and ō because paradigmatic diphthongization in these instances came at a later period when the syllable had already been checked by syncopation of a following vowel (e.g. BASILICA > basilca > baselca). When former tonic free ĕ became checked and vocalization occurred, the result was a triphthong [íeu]. As in the case of [éau], when the stress shifted to the middle element, giving rise to [iéu], the first element became consonantalized to [jéu]. According to Fouché, the middle element [-e-] was then labialized to [ö] (following the same development as [eu] < ē + [ɬ]) which gave the form [jöu]. This was reduced to [jö]

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[24] Phonétique historique, II, 336-37.

in the first half of the twelfth century (MĔLIUS > [mi̯ɬz > mieuz] > mieux), and remains to this day.[26]

4.13 Vocalization Following Tonic Free á

Tonic free a is believed to have passed in Gallo Roman to a vowel phonetically noted as [ē̤] by both Fouché and Pope. Pope points out that its exact phonetic value has not been determined since it was not coupled in assonance with either e̤ or e̤ blocked, but that its free position suggests a longer vowel [ē].[27] Both Pope and Fouché agree that the resulting long [ē̤] had passed through a diphthongal stage [ae] which would account phonetically for its length.[28] In any case the proposed form [ē̤], when followed by an [ɬ] brought into preconsonantal position, is thought by both authors to have moved from the first stage, [ē̤u], to a triphthong [ée̤u], which Fouché describes as segmentation of the [ē̤],[29] and Pope attributes to the development of a vocalic "glide" between [ē̤] and [u].[30] When the stress shifted onto the middle element of the triphthong, the first element consonantalized and the triphthong was differentiated from [ée̤u] to [iéu], as in TALES > [te̤ls > te̤eus > tieus]. When tonic

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[26] Phonétique historique, II, 323. See also Pope, From Latin to Modern French, pp. 201-02.

[27] Ibid., p. 107.

[28] Loc. cit.; Fouché, Phonétique historique, II, 227-28 and 261-64.

[29] Ibid., II, 319.

[30] From Latin to Modern French, p. 154.

free a followed a palatal, it was raised to [ie] (CALET > chielt) which also resulted in the triphthong [ieu] when vocalization took place. The evolution of the triphthong [iéu] from tonic free a + [ɬ] followed the same course as [iéu] resulting from tonic free ĕ + [ɬ], as described in the preceding paragraph, as in PALUS > pels > pieux.

4.14 Vocalization Following C.L. Checked and Unstressed ă̆

When Classical Latin checked ă̆ or unstressed ă̆ (either previously free or checked) fell before preconsonantal [ɬ], the result was the diphthong [au]: ALBA > aube, ALTARE > auter, CALEFARE > chaufer. Fouché states that the new diphthong [au] (from a + [ɬ]) eventually passed through the same stages as its predecessor, Classical Latin au: [au > aǫ > aǫ > ǭ].[31] However the final result varies and the two diphthongs [au], from different sources, did not develop simultaneously. Classical Latin au had already evolved to [ǭ] (auru > [*ǭro], laudat > [lǭdat]) in the Gallo Roman period. The [ǭ] from this source lost its length in some cases to become Old French [ǫ] (as in [ǫr]) or else closed to [ǫ] when final or followed by a vowel (as in Old French [lǫ], modern loue).[32] By the period of complete vocalization when a + [ɬ] became [au], the reflex of C.L. au was already at the stage [ǫ] or [ǫ].[33]

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[31] Phonétique historique, II, 299.

[32] See Ewert, The French Language, pp. 57-58.

[33] Fouché, Phonétique historique, II, 299-300.

4.15 Evolution of [au] (from a + [ɬ])

The path followed by [au] ([au > aǫ > ǫ]) as described by Fouché has been mentioned. He places the stage of monophthongization to [ǭ] in the thirteenth century, citing the form l'aulogier for l'horlogier in the Parisian Rôle de taille of 1292.[34] The [ǭ] then closed to [ǫ] which is its modern reflex: alba > aube > [ǫb], but the forms [ǫ] and [ǫ] were too late in appearing to join the [ǫ] from C.L. au and to close to [u] when followed by a vowel or when final. Pope points out that reduction of the diphthong was not accepted in stressed syllables until as late as the sixteenth century but that in unstressed syllables and vulgar speech it must have occurred earlier.[35]

4.16 Vocalization Following C.L. Tonic Free ŏ

As in the case of tonic free ĕ (see para. 4.12), at the moment of vocalization, tonic free ŏ could precede only a "secondary" [ɬ] brought into preconsonantal position through syncopation of a following unstressed vowel. However, syncopation of post-tonic vowels could occur either before or after the period of diphthongization of tonic free ŏ and thus two different results must be considered. Reflexes indicate that syncopation of post-tonic vowels in penultimate position occurred early enough to precede paradigmatic diphthongization of tonic free ŏ. Such syncopation blocked the tonic

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[34]Phonétique historique, II, 300. For a discussion of various remarks of sixteenth century grammarians on the sound of this diphthong see Thurot, De la prononciation française depuis le commencement du XVIe siècle, I, 425-34.

[35]From Latin to Modern French, pp. 199-200.

vowel, giving rise to the form [ol] which subsequently vocalized to [ou]: CŎLĂPU > colp > coup, *CŎLŬRU > co+dre > coudre, MŎLĔRE > mo+dre > moudre.[36] Syncopation of unstressed vowels in final syllable followed by final [-t] or [-s] occurred at a later period, probably in the seventh century.[37] By this time diphthongization of tonic free ŏ had occurred, giving rise to the form [uel] when syncopation brought [l] into preconsonantal position. Following vocalization, a triphthong was produced: DŎLES > dúelgs > dúeus, ŎCULØS > úelz > úeuz, *AVIŎLØS > aiúels > aiúeus.

4.17 Evolution of the Triphthong [üeu]

Fouché claims that the diphthong [úe] (< ŏ tonic free) was palatalized to [ǘe] from the moment of the shift of ū to [ü] in the system.[38] Vocalization of [ǘe + +] thus gave rise to the form [ǘeu̯]. According to the phonetic environment of [üeu̯], two developments occurred. When preceded by a labial or a velar consonant, [v], [k], or [g], [üeu̯] was reduced to [eu̯] which subsequently simplified to [ö]: VŎLET > vüeut > veut, CŎLLĬGĪS > cüeuz > ceuz. After other consonants, the first element of the form [üeu̯] dissimilated to [ieu̯]

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[36]For a discussion of the insertion of the "glide" consonant [d] between [l] and [r], see Klausenburger, French Prosodics and Phonotactics, pp. 45-47.

[37]See Straka, "Contribution à la description et à l'histoire des consonnes L," p. 301: ". . . de tous les effacements des voyelles inaccentuées, celui des voyelles finales (suivies de -t ou -s) est le plus récent . . . il est généralement daté du VII[e] siècle."

[38]Phonétique historique, II, 293.

and, after the shift of stress to [iéu], simplified to [jö]: ŎCŬLŌS > üelts > üeus > ieus (yeux).[39] Pope points out the differentiation of the diphthong from [ueu] to [ieu] apparently did not take place until after the Norman Conquest but leaves open the question of whether or not [ueu] was palatalized to [üeu] before being differentiated.[40]

4.18 Vocalization Following C.L. ŏ and ŭ

Just as Classical Latin ĭ and ē appear to have fallen together as Vulgar Latin [e], so ŭ and ŏ are treated as merging to Vulgar Latin [ọ]. Evidence in French of this merger between the back mid-high vowels is however confused and inconclusive especially when these vowels fall in tonic free position. Many examples demonstrate that tonic free ŏ became diphthongized to [ou] and then evolved to [õ], spelled eu: FLŌRE > flour > fleur. However the only clear example of a tonic free ŭ becoming [ö] is in the change of GŬLA to gueule. All other tonic free cases of ŭ appear to have remained [u], spelled ou: LŬPUS > loup, CŬBAT > couve, DŬBITU > doute.[41] Examples of vocalization after ŭ and ŏ are similarly one-sided as all of those given in the standard texts show only cases of tonic ŭ + [l] and it is difficult to find any cases of words with tonic ŏ + [l].

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[39] Phonétique historique, II, 323.

[40] From Latin to Modern French, p. 204.

[41] See para. 5.8.1., note 24 and Robson, "Literary Language, Spoken Dialect and the Phonological Problem in Old French," p. 167.

However since ŏ and ŭ are said to have merged as Vulgar Latin o̯, the following stages are posited in vocalization: CŬLPA > colpe > coupe, ŬLTRA > oltre > outre. It is assumed[42] that the spelling ou represents a diphthong which, with the systematic raising of [o] to [u], became [uu̯] and then simplified to its modern reflex, [u]. In unstressed position, there are a few examples of ŏ + [l]: SŎLIDARE > souder, SŎLSEQUIA > soucie, resulting also in modern [u], spelled ou.

4.19 Delimiting the Period of Vocalization

This chapter has attempted to outline the separate developments which occurred when [l] vocalized after each of the vowels in the evolving French system and to present an approximate chronology for the appearance and subsequent evolution of the diphthongs and triphthongs which were produced. However since manuscript evidence for the period in which vocalization was taking place is very slight,[43] the actual beginning and terminal dates of vocalization are open to speculation. One means of more accurately determining these dates is by examining contemporaneous events in the vowel system which afford the opportunity for meaningful comparisons. The following chapter attempts to more precisely delimit the vocalization period by considering the various sources and developments of the phonemes which were the end products of vocalization.

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[42]By Fouché, for example. See Phonétique historique, II, 308.

[43]See Chapter III.

V. AN ATTEMPT TO ESTABLISH DATE OF COMPLETE VOCALIZATION

5.1 Monophthongization of the Vocalization Diphthongs

Except in the case of the highest vowels, Latin ī and ū, for which a diphthongal combination with vocalized [l] is not attested in the Central French dialects, all other vowels apparently produced diphthongs in combination with vocalized preconsonantal [l]. As might be expected, combination of any vowel with high back rounded diphthongal [-u] resulted ultimately in raising and/or rounding of the vowel. The final result of all such combinations was reduction to three sounds: /u/, /ö/ and /o/, resulting from monophthongization of [ou], [eu] and [au], respectively. However each of these phonemes, in addition to representing vocalization diphthongs, can be traced to paradigmatic sources. The phoneme /u/ represents former Latin ŏ and ŭ and ō in checked position. The phoneme /ö/ is the reflex of former Latin ŏ and ō in tonic free position, and /o/ is derived from Latin au and checked ŏ. It is significant that the graphies now used to spell these phonemes correspond to the vocalization digraphs, ou, eu and au. The use of these graphies suggests that digraphs representing vocalization diphthongs may have been generalized to spell the sounds from all sources. If this is so, then it is pertinent to elucidate the origins of the digraphs concerned with a view to discovering what their use might indicate about the date of complete vocalization.

5.2 Apparent Orthographic Generalization of Vocalization Digraphs

Although each of the phonemes derived from the monophthongization of vocalization diphthongs may also be traced to sources in the language not directly connected to vocalization, it is significant that modern spellings of these sounds appear to represent the diphthongs resulting from vocalization. The case of /o/ is least puzzling in this regard since it is spelled au or eau only when it represents the reflex of these vocalization diphthongs, but o or ô when it has evolved from another source. However the phoneme /u/ is always spelled ou whether its source was an [ou] diphthong or simply Latin ŭ, ō or ŏ in checked position. Similarly, the sound /ö/ is characteristically and most frequently spelled eu regardless of its source in a vocalization diphthong (< e + [l]) or in Latin tonic free ō or ŏ. The latter two digraphs, ou and eu, appear to have been in general use by the thirteenth century.[1] Since many instances of the sounds spelled with ou and eu do not represent the products of vocalization, generalization of the vocalization digraphs to all occurrences of the sounds involved is implied. To test the validity of this notion and its implications for the dates of vocalization and monophthongization of the vocalization diphthongs it is necessary to examine the former history of sounds represented by ou and eu.

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[1]See Gaston Paris et Léon Pannier, Préface à La Vie de Saint Alexis: poème du XI[e] siècle et renouvellements des XII[e], XIII[e] et XIV[e] siècles, publiés avec préfaces, variantes, notes et glossaires (Paris, 1872), p. 60.

5.3.1 Early French Spelling of High-rounded Vowels

The sounds now spelled with the graphies ou and eu find their sources in the high and mid back vowels of Latin as well as in the vocalization diphthongs. The evolution of the high back vowels and subsequent introduction of a new series of front-rounded vowels, unknown in Latin, caused acute scribal problems, the unsatisfactory solutions of which are reflected in the difficulty and uncertainty of interpreting eleventh and twelfth century manuscripts. The palatalization of Latin ū, although quite consistent as a sound change, instigated a chain of scribal difficulties. Instead of adopting a new written symbol for the new phoneme, /ü/, early scribes continued to represent it with the graphy u. Confusion immediately resulted in that the graphy u could not now be used, or could only be used ambiguously, to represent the sound [u].[2]

5.3.2 Three Sounds Represented by Two Graphies

Whether or not there was in fact a sound [u] in Early French, Gaston Paris' analysis of four manuscripts of the eleventh century poem, La Vie de Saint Alexis, demonstrates that there were at least more distinct back vowels in the language than there were distinct graphies to represent them. Studying the assonances of the poem, Paris notes that in the insular manuscripts the graphy u is ambiguously used to represent two distinct sounds which are never

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[2]See Paris, Préface à La Vie de Saint Alexis, p. 61.

coupled in assonance with each other: the reflex of Latin ū and the reflex of Latin ŭ, ō.[3] The use of the graphy o is generally confined in these insular manuscripts to the representation of the reflex of Latin checked ŏ and au. The ambiguity takes an alternate course in the earliest manuscript, of continental source, which Paris examined.[4] In this case the graphy u is confined solely to the representation of the reflex of Latin ū, while o is ambiguously used to represent both the reflex of Latin ō, ŭ and the reflex of Latin ŏ, au.[5] Whichever system is used, the scribal problem outlined by Paris is that only two graphies, o and u, existed to represent three distinct sounds, the sources of modern /ü/, /u/ and /o/.[6]

5.3.3 High Rounded Vowels in Pre-tonic Syllables

Further evidence for the existence of three distinct high rounded vowels in Early French is provided in Robson's discussion of the insular preference for u in pretonic syllables. He points out

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[3]Préface à La Vie de Saint Alexis, pp. 62-63. Paris refers to the work of Diez who was first to notice this spelling problem in Norman manuscripts: Grammaire des langues romanes, 3rd ed., transl. A. Brachet and G. Paris (Paris, 1894), I, 414.

[4]Ibid., pp. 2-3. This manuscript of the Vie de Saint Alexis was apparently copied in England in the twelfth century from an earlier continental source.

[5]Ibid., p. 59.

[6]Ibid., p. 61: "Or supposons que le son de l'o (< ō, ŭ) ait été à peu près celui de ou . . . et nous comprendrons l'embarras dans lequel se trouvèrent les scribes qui n'avaient plus que deux caractères, o et u, pour rendre trois sons, o, u et ü."

that the earliest St. Alexis manuscript (the one examined by Gaston Paris) substituted u for etymological o in the pretonic syllable in at least one instance: corage is written curage, while the Digby manuscript of the Roland goes even farther and extends the use of u to words in which the St. Alexis retained o, e.g. dunet, purrai, vuldrat. Since the u in these words has no etymological basis in Latin, Robson claims that its use could have been extended to such words as *purter, *murtel, *urrat, if current pronunciation had called for a high back rounded vowel in these cases. But since the latter words appear invariably as porter, orrat, mortel, with an o, Robson concludes that the Old French dialects known to the insular scribes did in fact distinguish two back-rounded vowels, represented by u and o, as well as front-rounded [ü] (represented also by u) in the pretonic syllable.[7]

5.3.4 Dialectal Spelling Differences

In the earliest manuscript of the St. Alexis examined by Gaston Paris,[8] the graphy o represents the reflexes of Latin ō, ŭ as well as Latin ŏ, au while u is generally confined to representation of the sound [ü]. In insular manuscripts, on the other hand, the graphy u represents two sounds, the reflexes of Latin ū (> [ü]) and of Latin ō, ŭ, while o is limited to the reflex of Latin ŏ, au.[9]

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[7]"Literary Language, Spoken Dialect and the Phonological Problem in Old French," p. 139.

[8]Préface à La Vie de Saint Alexis, pp. 2-3. See para. 5.3.2.

[9]See para. 5.3.2 and 5.3.3.

Whichever system is used, it is the reflex of Latin ō, ŭ, the source of modern [u], which is caught in the middle, spelled sometimes with an o like its lower partner and sometimes with a u like its fronted partner. The implication, according to Paris, is not so much that different sounds existed in different dialects as the reflexes of Latin ō, ŭ, but that, given the common problem of only two graphies, o and u, to represent three sounds, scribes of different areas chose different ways to solve it, and the confusion in both cases exists only in the spelling.[10] Paris notes that in the Strasbourg Oaths, the Clermont poems and the Valenciennes fragment, the use of both u and o to represent the reflex of Latin ō, ŭ is indiscriminately intermingled. Thus, for example, one may find modern amour spelled as either amur or amor in the same manuscript. He concludes that later, when the dialects became more clearly separate, it becomes apparent that the notation u was adopted by insular scribes, while the scribes of Picard and Bourgogne, as well as those who were "proprement français," favored the o graphy.

5.4 Introduction of the digraph ou

The problem of using only two graphies, o and u, to represent three rounded vowels, was solved by the introduction of the digraph ou to represent the reflex of Latin ō, ŭ in checked position. The

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[10] Préface à La Vie de Saint Alexis, p. 62.

[11] Ibid., p. 63.

use of the graphy o was now confined to reflexes of Latin ŏ and au, while the spelling u signified only [ü]. Paris states that this orthographic solution was in use in the thirteenth century by which time the sound [u] (from Latin checked ō, ŭ) was spelled ou to distinguish it from its lower partner [o] (< Latin ŏ, au) and front-rounded partner [ü].[12] He implies that the digraph ou was invented to represent the sound [u] because its two elements represent the two sounds between which it falls:

> On ne pouvait échapper à l'une ou à l'autre de ces deux confusions qu'en inventant un signe particulier pour ce son intermédiare; c'est ce qu'on fit plus tard en l'exprimant par les notations réunies, -ou - des deux sons entre lequel il se plaçait.[13]

5.5 Origin of the digraph ou

It is unlikely that everyone would agree with Paris' suggestion that the digraph ou was merely the felicitous invention of a thirteenth century scribe who contrived it from existing separate graphies as the solution to an orthographic dilemna. Other writers have tended to assign the digraph a phonetic value in its own right and have assumed that it originally in fact represented a diphthong [ou] which was later simplified to [u]. Pope, for example, somewhat inexplicitly suggests that the source of the ou digraph to represent [u] was the diphthong [ou] which resulted from the vocalization of

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[12] Préface à La Vie de Saint Alexis, p. 64.

[13] Ibid., p. 62.

Vulgar Latin [ǫ], [ǫ] + [ɫ]:

> In the thirteenth century, when the range of back labial vowels was extended by the development of ǫ from earlier ǫ, it became more than ever necessary to distinguish between these sounds, and gradually the digraph ou was brought into use to denote u. Its use is occasional in the early thirteenth century . . . but was generalised rather slowly. The starting-point lies in words of the type mout, escoute, genouz, fous, in which the diphthongs ǫu and ǫu had levelled to u.
>
> Prae-consonantal ɫ > u . . . and the symbol l was sometimes accorded the value [u], ol being used for ou > [u].[14]

Since all the words cited by Pope as the "starting-point" for the use of the ou digraph (mout, escoute, genouz, fous) contain a vocalized preconsonantal l, it seems to be implied that the source of the digraph was a vocalization diphthong which had monophthongized. Even earlier examples in the manuscripts indicate that an ou digraph was extended to represent a single sound and lend support to the notion that vocalization was the source of the digraph. Fouché claims that [ou] from vocalization had monophthongized to [u] by the first half of the twelfth century and cites rhymes such as estouz (< STŬLTUS): touz (< TŌTTUS) which he says occurred after 1150.[15] Although Robson affirms that twelfth century manuscripts in general retained preconsonantal l in spelling, he cites the forms poulles and fourment in the Marchiennes rent roll (circa 1200) in which the ou digraph represents what Robson claims to be a single sound, the reflex of

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[14] From Latin to Modern French, p. 278.

[15] Phonétique historique, II, 308.

Latin checked ŭ.[16]

5.6 Introduction of the digraph eu

The digraph ou, representing the sound [u], is used to spell the reflex of Latin checked ŭ, ō,[17] (TŬRRE > tour, ŬRSU > ours) as well as the simplified diphthongs resulting from vocalization of [l] after Latin ŏ, ō, ŭ (CŎLĂPU > coup, MŬLTU > mout). The digraph eu, representing the sound [ō], is used to spell the reflex of Latin tonic free ō, ŭ, ŏ (FLŌRE > fleur, GŬLA > gueule, NŎVA > neuve) as well as the simplified diphthong resulting from vocalization of [l] after Latin ĭ, ē (ILLOS > eux). The first attesting graphies for the use of the digraph eu are the rhymes Vis de Leuu (< VISUM DE LŬPU): Froisseleu, an isolated and contentious case from the eleventh century Domesday Book.[18] From the later twelfth century come such rhymes as jeus:corageus from Chrétien's Erec et Enide (3391)[19] which show the reflexes of both tonic free ŏ and tonic free ō represented by the eu

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[16]"Literary Language, Spoken Dialect and the Phonological Problem in Old French," pp. 147-49.

[17]In the interests of tradition and consistency, ō is included with ŭ in this instance. However it is difficult to find a convincing example of a French word derived from Latin checked ō. The form cour is quoted by some authors as the reflex of CŌRTEM (see K.R. Nyrop, Grammaire historique de la langue française [Copenhague, 1914], I, 199,) but this has been disputed and the suggestion put forth that cour may have been instead from CŌHORS, CŌHORTIS. See note 24, para. 5.8.1 following for a discussion of this problem and further references.

[18]Quoted by Pope, From Latin to Modern French, p. 105.

[19]Ibid., p. 201. The etymons are apparently jeus < JŎCUS and corageus < CORAGŌSUM (See Ewert, The French Language, p. 309).

digraph. Robson's analysis of the Marchiennes Abbey rent role (circa 1200) contains the form feutriers in which the digraph eu represents former ĭ + preconsonantal l.[20] Robson reports that while the graphy eu to represent the reflex of tonic free ō appears in Picard fragments from the eleventh century forward, the "regular use of the graphy eu in the phonologically appropriate positions . . . is found only in the thirteenth century in Picard and Parisian documents."[21]

5.7 Origin of the Digraph eu

The first appearances of the digraph eu represent reflexes of tonic free ō, ŭ and ŏ.[22] The use of the digraph to represent the reflex of the vocalization diphthong [eu] does not appear regularly until the thirteenth century.[23] It does not appear from this evidence that the source of the digraph eu was in a vocalization diphthong, [eu], which had reduced and was then generalized to represent all occurrences of

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[20]"Literary Language, Spoken Dialect and the Phonological Problem in Old French," p. 144.

[21]Ibid., p. 167, note 1.

[22]See para. 5.6 for examples, as quoted by Pope, From Latin to Modern French, pp. 105, 201.

[23]See Robson, "Literary Language, Spoken Dialect and the Phonological Problem in Old French," p. 144: "The standard digraphs ie, ue, oi and eu may be attributed to Picard rather than to central scribal tradition. The insular manuscripts (and twelfth-century surviving manuscripts in general) had retained the Latinizing pre-consonantal l not only on analogical grounds before suffixed flexions (dol-s, vol-t), but within stems (hal-t, colp-s); thirteenth century usage on the whole tended to substitute u in all these cases and to use five functionally distinctive digraphs (or trigraphs), au, iau, eu, i(e)u, ou, together with the symbol x for us."

the sound [ö]. The eu digraph in such words as FLŌRE > fleur, GŬLA > gueule, NŎVA > neuve, represents the reflex of a tonic vowel (Latin ō, ŭ, ŏ) in free syllable position. This introduces the possibility that the spelling eu derives from a paradigmatic diphthong, and not from a form borrowed from the vocalization context. This problem does not arise in the question of the generalization of the ou digraph. In such forms as BŬCCA > bouche, ŬRSU > ours, ou represents the reflex of Latin blocked ŭ. There is no evidence in the history of French to indicate that ŭ diphthongized in a blocked syllable. Therefore the ou digraph in these forms can be more readily assumed to be merely an orthographic device, drawn from another source (in this case the vocalization diphthong), to represent a single sound, [u]. To argue a similar origin for the eu digraph requires an examination of the history of the tonic vowels which it now orthographically represents.

5.8.1 Evolution of Latin Tonic Free ō

The graphy eu in such words as HŌRA > heure, FLŌRE > fleur, GŬLA > gueule represents the reflex of Latin tonic free ō, ŭ. It is generally held that the French language participated in the alleged common Romance convergence of Latin ō, ŭ to form Vulgar

Latin mid-high [o̩].[24] In French, all but the highest vowels (< Latin Ī and Ū), are frequently assumed to have diphthongized in tonic free position. Consequently, many historical grammars report that Vulgar Latin mid-high [o̩], the product of the alleged convergence of Latin ō and ŏ, underwent systematic diphthongization in French to become the diphthong [ou]. The postulated phonetic steps in this development are lengthening of the stressed vowel in an open syllable, followed by differentiation of the second element, [ó̩] > [ó̩o] > [ó̩u̯].[25] Fouché claims that paradigmatic diphthongization of Vulgar Latin tonic free [o̩] occurred in the late seventh century[26] and most writers appear to

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[24]See for example, Bourciez, Eléments de linguistique romane, p. 42; Elcock, The Romance Languages, pp. 43-44; Pope, From Latin to Modern French, p. 89.

It is difficult to find conclusive evidence that the convergence of Latin ō and ŏ did in fact take place in the history of French. One of the difficulties is the paucity of examples in the corpus of words containing these vowels which would clearly demonstrate that a merger took place. In tonic free position the only common examples of Latin ŏ evolving in common with Latin ō are the forms GŎLA > gueule, and the more dubious DŎOS > deux. Against these two examples can be set a body of words in which Latin tonic free ŏ did not, like ō, move forward to [ö], e.g. LŎPA > louve, LŎPUS > loup, CŎBAT > couve, CŎBITU > coude, DŎBITU > doute, DŎPLUM > double, etc. Although some explanations have been tendered to dismiss these presumably aberrant developments (see Pope, From Latin to Modern French, p. 185), this group of exceptions has not been explained to everyone's satisfaction.

In tonic checked position there is a similar lack of examples to demonstrate convergence of ŏ and ŭ in French. However in this case the deficiency is in examples of words containing the reflex of tonic checked ŏ. See note 17, para. 5.6. For a further discussion of this problem, see Robson, "Literary Language, Spoken Dialect and the Phonological Problem in Old French," p. 167, n. 1.

[25]See Ewert, The French Language, p. 36; Pope, From Latin to Modern French, pp. 103-06. Fouché gives a slightly different, more involved explanation in Phonétique historique, II, 229.

[26]Loc. cit.

concur that this was a development of the Gallo Roman period.[27]

5.8.2 Manuscript Evidence of a Paradigmatic [ou] Diphthong

The manuscript evidence for paradigmatic diphthongization[28] of Vulgar Latin tonic free [ǫ] in French is very slight. The two cases cited by those who support the notion of a paradigmatic [ou] diphthong are the forms bellezour (< *BELLATIŌREM) and soure (< SŪPER) in the Eulalia (c. 880) and the form correcious in the tenth century fragment, Sermon on Jonah.[29] However, Paris points out that the two "ou" forms of the Eulalia are isolated examples for elsewhere in the poem, [ǫ] is represented by the graphy o.[30] Similarly in the Strasbourg Oaths, the Valenciennes fragment, the Clermont poems and the manuscripts of the Saint Alexis examined by Paris, the reflex of [ǫ] is spelled by either o or u (see para. 5.3.4).[31] It is this sort of evidence which has led some scholars to dismiss the meagre examples of a paradigmatic [ou] diphthong as inconclusive and to claim instead that tonic free [ǫ]

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[27]Bourciez claims that this diphthongization occurred towards the end of the eighth century, Eléments de linguistique romane, p. 149, while Straka maintains it took place in the sixth ("Contribution à la description et à l'histoire des consonnes L," p. 302).

[28]Luigi Romeo defines a paradigmatic diphthong as one "formed by pressures of vowel differentiation in the vocalic system." See The Economy of Diphthongization in Early Romance (The Hague-Paris, 1968) p. 112.

[29]See Pope, From Latin to Modern French, p. 105.

[30]Préface à La Vie de Saint Alexis, pp. 62-63.

[31]Ibid., p. 63.

remained a monophthong which was fronted to [ö] about 1200.[32] It is at about this time that the digraph eu begins to appear in the manuscripts and if it is true that tonic free [ǫ] remained a monophthong, it would be easier to argue that the digraph eu did indeed originate in a vocalization diphthong. However there are other theories to be considered.

5.8.3 Differentiation of Paradigmatic [ou]

Scholars who accept the idea that tonic free [ǫ] did in fact diphthongize to [ou] in Gallo Roman have adopted two lines of reasoning to explain the subsequent development of the diphthong. Those who accept the hypothesis that the modern spelling, eu, represents an actual phonetic stage in the evolution of tonic free ō appear to adopt the following stages of development: [ou] is differentiated to [eu] which by assimilation of the [e-] element becomes [öu], which in turn is reduced to [ö].[33] While instances of the eu graphy are plentiful in the thirteenth century and afterwards, earlier evidence is limited. An isolated example occurs in the eleventh century Domesday Book rhymes: Vis de leuu: Froisseleu which is quoted by Pope.[34] Apparently citing the same instance of the eu graphy, H. Rheinfelder reports that [ou]

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[32]This is the view, for example, of Nyrop. See Grammaire historique de la langue française, I, 199-200.

[33]See Pope, From Latin to Modern French, p. 201 and Fouché, Phonétique historique, II, 303.

[34]Ibid., p. 105.

existed for a comparatively short time in Old French since the spelling eu is already found in the second half of the eleventh century.[35] On the other hand, scholars who either reject or merely neglect mention of a stage [eu] in the development of tonic free [ǫ], apparently see the diphthong [ou] being influenced by the palatalization of ū. The idea is that the fronting of the second element to [ü] prompted fronting of the first element, by assimilation, to [ö], to produce the form [öü] which then simplified to [ö].[36]

5.8.4 The Sound of Paradigmatic [ou]

In an article on the development of tonic free [ǫ] to modern [ö], R. C. Johnston draws an important conclusion based on the assonances in early texts. He finds that a sound [eu] or a sound [öu] is incompatible with the evidence of assonances in twelfth century texts, beginning with the Roland (circa 1150):

> The words nevod: plurt: barons: curs: loinz can assonate together only if the dominant sound of them all is ǫ (or u if the Western pronunciation be accepted) and this is manifestly impossible if the sound of the tonic vowel in nevod has been eu since the end of the eleventh century.[37]

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[35] Altfranzösische Grammatik (Munich, 1937), p. 24: "Der Diphthong ou ist im Afrz. verhältnismässig kurze Zeit vorhanden, denn das eu findet sich erstmals schon in der zweiten Hälfte des 11 Jh. und scheint sich vom Franzischen aus verbreitet zu haben."

[36] See Albert Dauzat, Phonétique et grammaire historique de la langue française (Paris, 1950), pp. 62-63: "En francien, l'élément u passe à ü, qui palatalise l'o en oe (ou > oü > oeü), puis l'ü s'affaiblit peu à peu pour être absorbé par l'oe."

[37] "How Close O Tonic and Free Became ö," Studies in French Language and Medieval Literature presented to Mildred K. Pope (New York, 1939), p. 217.

Further evidence of the same type may be found in Paris' analysis of the assonances of the earliest known extant manuscript of the Saint Alexis in which Paris posits the same sound for the o of linçol, bricon, pardoinst, font, om, for example, which assonate together in Verse LIV.[38] If linçol had been differentiated to [linçeul] or [linçõul], it could not assonate with the other words. Thus it must be concluded, if the interpretation of these assonances is correct, that paradigmatic [ou] had neither the sound [eu] or [õu] in the eleventh and twelfth centuries.

5.8.5 Reduction of the Paradigmatic [ou] Diphthong

It has just been indicated that the eleventh century spelling o (or u in insular manuscripts) could not possibly have represented a diphthong whose first element was differentiated to either [eu] or [õu] since such words as nevod, plurt, barons, loinz assonate together. Rhymes from the later twelfth century and thirteenth century support this hypothesis and suggest that the reflex of tonic free ō, though spelled with the eu graphy, was monophthongizing to [ö]. Pope quotes the following examples from Chrétien's Erec et Enide: jeus: seus (2835) and jeus: corageus (3391).[39] These examples show reflexes of Latin tonic free ŏ and ō rhyming together. As Johnston points out, such rhymes can only occur when both sounds have reached the stage [ö].[40]

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[38]Préface à La Vie de Saint Alexis, pp. 58-60.

[39]From Latin to Modern French, p. 201. The etymons of these words are apparently jeus < JOCUS, seus < SŌLUS and corageus < CORAGŌSUM.

[40]"How Close O Tonic and Free Became ō," p. 223.

In like manner the rhymes eliminate the possibility that the digraph eu represents a diphthong [eu] since tonic free ǒ does not appear to have passed through any stage which could rhyme with such a sound.[41]

5.9 Generalization of the eu Digraph from Vocalization

Having demonstrated that the reflex of tonic free higher-mid o̅ could not have been a diphthong [eu] in the stage preceding simplification to [ö], Johnston goes on to question the basis for the use of the eu digraph in this context. He points out that the use of the digraph to spell the reflex of lower-mid ǒ is never attributed to the existence of an [eu] diphthong in the history of this sound.[42] Why then should the use of the digraph to spell the reflex of higher-mid o̅ be ascribed to the prior existence of an [eu] diphthong in the course of its evolution? Johnston hypothesizes that the use of the digraph in the latter case is no more due to the earlier existence of an [eu] diphthong in the evolution of o̅ than it is in the evolution of ǒ, but that its source was the simplified [eu] diphthong produced by the vocalization of [ę + ł]. That the vocalization diphthong had reduced to [ö] by the time that the eu digraph begins to appear in the reflexes of ǒ and o̅[43] is indicated by such twelfth century rhymes as Iseux (< Germ. Ishildis):

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[41]Fouché outlines the evolution of tonic free ǒ as follows: ǒ [úo] > [úe] > [ůo] > [ůö] > [ö], and reports that the stage [ö], following monophthongization, had been attained by the twelfth century, Phonétique historique, II, 293. See also Dauzat, Phonétique et grammaire historique de la langue française, p. 62.

[42]See note 41 above.

[43]See para. 5.8.3.

preux (< PRŌDE) in Chrétien's Cligés (line 5261).[44] Johnston concludes that the spelling finally adopted to represent [ŏ] from all three sources (tonic free o̯ and o̅ and [e̯ + ɬ]) is the generalization of the reduced vocalization diphthong [e̯u̯].[45]

5.10 Implications of the Generalization of Vocalization Digraphs

If the vocalization diphthongs [ou] and [eu] were indeed the source of the digraphs used to spell the sounds [u] and [ŏ] respectively, the generalization of the digraphs suggests conclusions which may be drawn about the date of termination of vocalization. The digraph ou (originating in vocalization of o̯, o̅, u̯ + [ɬ]) appears to be generalized to represent occurrences of the single sound [u] from about 1150 forward. The digraph eu (originating in vocalization of e̅, i̯ + [ɬ]) appears to be generalized to represent the single sound [ŏ] from all sources by the latter half of the twelfth century.[46] It may thus be concluded from this evidence that the vocalization diphthongs [ou] and [eu] had monophthongized by this time and hence that vocalization in these cases was complete before this time, that is, by approximately the end of the

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[44]As quoted by Pope, From Latin to Modern French, p. 155. See also Fouché, Phonétique historique, III, 858.

[45]"How Close O Tonic and Free Became ŏ," pp. 223-24.

[46]See para. 5.5 and 5.9 for manuscript evidence of the generalization of the digraphs of ou and eu respectively.

eleventh century.[47] In addition, it seems likely that the reduction of the vocalization triphthongs [ieu] and [ueu][48] to [jö] was concomitant with the reduction of the vocalization diphthong [eu]. Rhymes such as lieus: cieus (line 13034) from the twelfth century Roman de Troie[49] suggest the probable simplification of [ueu] (< LŎCUM) and [ieu] (< CAELOS) by this time.

5.11 Establishing Complete Vocalization of [au] and [eau]

If complete vocalization is to be established on the basis of reduction of the diphthongs involved, its date would have to be advanced considerably in the case of [au] and [eau][50] for simplification of these diphthongs appears to have been retarded. Pope reports that monophthongization of stressed [au] was not accepted by grammarians until the sixteenth century, while [eau] was similarly levelled at this time to [eo].[51] Complete monophthongization of the latter diphthong was

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[47]This date seems to be compatible with the conclusions of several authorities about the date of termination of vocalization, e.g. Bourciez, Précis historique de phonétique française, sec. 188: "Il est probable que dans tout le Nord de la France la vocalisation était un fait accompli vers 1100." See also Dauzat, Tableau de la langue française, p. 111: "l'évolution paraît achevée au XIe siècle," and Fouché, Phonétique historique, II, 299: "la vocalisation complète de l antéconsonantique peut être considérée comme terminée vers la fin du XIe siècle."

[48]See para. 4.12 and 4.17 for a description of these triphthongs.

[49]As quoted by Pope, From Latin to Modern French, p. 204.

[50]See para. 4.10, 4.11 and 4.14, 4.15 for a description of the sources and development of these vocalization diphthongs.

[51]From Latin to Modern French, p. 199. See also Fouché, Phonétique historique, II, 299-300.

not formally accepted until after the middle of the seventeenth century.[52] Pope suggests that in less stressed syllables and in vulgar speech, levelling of these diphthongs occurred before this time but manuscript evidence of this is extremely slight until the sixteenth century. In the Rôle de taille of 1292 the spelling l'aulogier for l'horlogier suggests that [au] had been reduced.[53] The Rôles de taille of the end of the thirteenth century and beginning of the fourteenth century also show differentiation of [eau] to [iau][54] but this does not prove that reduction to [jo] had occurred. Moreover, against any evidence of early reduction of [au] can be set twelfth century assonances such as altres, espalle coupled with firebrace, sages, messages,[55] in which a + l assonates with a before other consonants. The actual pronunciation of altres could have been [a‿tres] with no vocalization, [au‿tres] with only partial vocalization or [autres] with complete vocalization. But it could not have been [otre] with total monophthongization of the [au] diphthong to [o]. Similarly such rhymes as emaus: Menelaus from the twelfth century Eneas (line 3139),[56] while

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[52]See Pope, From Latin to Modern French, p. 200; Fouché, Phonétique historique, II, 336-37; Bourciez, Eléments de linguistique romane, p. 641, and Ewert, The French Language, p. 60.

[53]From Latin to Modern French, pp. 199-200.

[54]Examples are quoted by Fouché in Phonétique historique, II, 336.

[55]These examples are from Le Couronnement de Louis, and are quoted by Brunot in Histoire de la langue française, I, 158.

[56]Quoted by Pope, From Latin to Modern French, p. 155.

suggesting vocalization, are not a conclusive demonstration of complete vocalization since the pronunciation could have been [esmauʷts] with only partial vocalization. Since au and eau were not generalized to represent [o] from other sources, in the manner of the digraphs eu and ou, this route of demonstrating reduction, and hence prior complete vocalization, is eliminated.

5.12 Significance of Non-generalization of au and eau

That the digraph au and trigraph eau were not ordinarily extended to spell [o] from sources other than reduced vocalization diphthongs contrasts sharply with scribal treatment of the ou and eu digraphs. The difference in treatment may be attributed to several factors. The non-generalization of au and eau may merely reflect the lack of any scribal problem in representing the sound [o], as opposed to the difficulty imposed by the introduction of [ü] and the difficulty with [ö] caused by its novelty as a member of the Early French system. The fact that the spelling remained more conservative in the case of au and eau, as reflected in the non-generalization of the graphies, may corroborate the notion that the [au] and [eau] diphthongs were considerably later in reducing than [ou] and [eu]. Dauzat reports that spelling closely mirrored pronunciation until the twelfth century and thereafter became fixed, regardless of the continued evolution of sounds.[57] Whether the

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[57] Tableau de la langue française, pp. 128-29: "L'orthographe suivit à peu près l'évolution de la prononciation jusqu'au XII^e siècle, époque à laquelle les diphtongues écrites correspondaient aux diphtongues prononcées. Le dernier changement enregistré fut celui de ei en oi. A partir de ce moment, l'orthographe se fige . . . "

non-generalization of au and eau implies that vocalization itself occurred later after Latin a[58] and checked ĕ or whether it simply indicates variation in the dates of reduction of the vocalization diphthongs leads to the question of establishing the date of commencement of vocalization.

5.13 Establishing Date of Commencement of Complete Vocalization

An attempt was made in the preceding paragraphs to elucidate the date of termination of complete vocalization by demonstrating reduction of two vocalization diphthongs as revealed in the generalization of the graphies ou and eu. On the basis of this evidence, vocalization resulting in [ou] and [eu] appeared to be complete by approximately the end of the eleventh century. In the case of [au] and [eau], the date of complete vocalization is more difficult to fix. Because evidence of monophthongization is slight until the sixteenth century and because the graphies au and eau were not normally extended to represent [o] from other sources, it is not easy to distinguish with certainty between complete and merely partial vocalization.[59] The latter problem arises also in an attempt to demonstrate not the termination, but the commencement of vocalization. Manuscript evidence from the earliest examples on does not always provide positive proof of complete vocalization

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[58]The evidence of the earliest examples of vocalization implies the opposite. See para. 2.17.

[59]For a discussion of complete and partial vocalization, see para. 2.15 - 2.17.

since only partial vocalization is frequently a possibility. This is all the more so because of the orthographic practice of spelling vocalization diphthongs with an l graphy in the place of diphthongal [-u̯].[60]

5.14.1 Comparing Evolutions of Two [ou] Diphthongs

One means of interpreting manuscript evidence to determine the date of commencement of complete vocalization is by comparing the development and chronologies of two apparently similar diphthongs which, however, produced divergent reflexes. An opportunity for such a comparison is afforded in the case of [ou]. The [ou] diphthong produced by vocalization of Latin ŏ, ŭ, ō + [l] does not appear to have been the only [ou] diphthong extant in the Early French system. Although some scholars have claimed that Vulgar Latin mid-high [o̩] (the product of the presumed convergence of Latin ō and ŭ) remained a monophthong and was subsequently fronted to [ö], another view with respectable antecedents is that a paradigmatic [ou][61] resulted from systematic diphthongization of Vulgar Latin mid-high tonic free [o̩].

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[60]See Pope, From Latin to Modern French, p. 278.

[61]See para. 5.8.1 and 5.8.2. Among authors who support paradigmatic diphthongization of tonic free [o̩] are: Ewert, The French Language, p. 36, and Pope, From Latin to Modern French, pp. 103-06. Fouché gives a more elaborate explanation of the phonetic stages of the development of V.L. [o̩] to [o̩u̯] in Phonétique historique, II, 229.

However the reflex of the alleged paradigmatic [ou] diphthong is [ö], spelled eu, while the reflex of the [o̯u̯] diphthong resulting from vocalization of ŭ, ō, ŏ + [l] is [u], spelled ou. Since the [ou] from vocalization did not follow the same evolutionary course as paradigmatic [ou], comparison of their respective developments may suggest possible conclusions regarding the date of commencement of complete vocalization.

5.14.2 Early Spelling of Both [ou] Diphthongs

By the later twelfth and early thirteenth centuries, the reflex of paradigmatic [ou] was regularly spelled with the digraph eu which appeared at this time to represent the sound [ö].[62] At the same time, the reflex of [ou] from vocalization was regularly spelled with the digraph ou representing the sound [u]. However in tracing the earlier histories of paradigmatic [ou] and [ou] from vocalization, one finds their etymons spelled with o and ol, respectively (or u, ul in insular manuscripts).[63] Not only is the same graphy used for both sounds, but it appears that the two sounds could assonate together. In Gaston Paris' analysis of the assonances of the eleventh century St. Alexis, one finds such words as dolor (representing the evolution of paradigmatic [ou]), listed together with oltre (representing the etymon of [ou] from vocalization) grouped together as possessing the

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[62]See para. 5.6 and 5.7.

[63]See para. 5.3 to 5.4.

same tonic vowel. Paris represents this vowel as ó, the reflex of Latin ŏ, ŭ, distinguishing it thus from ò, also spelled with the graphy o, but representing the reflex of Latin ŏ, au which never assonates with ó.[64] Since dolor becomes douleur (tonic [ǒ]) whereas oltre becomes outre (tonic [u]), the problem arises as to how to interpret the single graphy o which spells both sounds in the eleventh century.

5.15 Enigmatic Assonances

The difficulty of interpreting the sound represented by the graphy o in such words as dolor and oltre in the assonances of the Alexis[65] is emphasized if more closely resemblant forms, which yet produced divergent reflexes, are compared. For this purpose the word torbes (< TŬRBA) may be substituted for oltre (< ŬLTRA) and compared with dolor. It seems safe to assume that the tonic vowels of torbes and oltre were the same since their respective etymons and reflexes correspond and since they are found assonating together (Verse 103) in the Alexis. Although tórbes (or óltre) cannot assonate with dolór because the former are accented on the penult and the latter is accented on the final syllable, Paris claims they contain the same tonic vowel,[66] and it is hard to understand how

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[64]Préface à La Vie de Saint Alexis, pp. 58-68. See page 59 for Paris' notations ó and ò and the basis for them.

[65]As studied and grouped by Paris, loc. cit.

[66]He groups both in the list of assonances of tonic "ǒ", loc. cit.

their tonic vowels could have differed at the time of the Alexis: torbes is found assonating with Rome (Verse 103) which in turn assonates with fondet, fregondent (Verse 60), while dolor is grouped in assonance with maison, hom (Verse 44). Nevertheless torbes becomes tourbe (tonic [u]) while dolor becomes douleur (tonic [ö]) even though both tonic vowels appear to be in checked position before [r] at the time of the Alexis.

5.16 Necessity of Positing a Paradigmatic [ou] Diphthong

The tonic vowel of torbes becomes high back rounded [u] (tourbe) but the tonic vowel of dolor becomes fronted to [ö] (douleur). Since both vowels are in tonic checked position before [r] in the Alexis, it would thus seem essential that they were somehow differentiated from each other in another way at this time. Otherwise it is impossible to explain the subsequent divergence to [u] and [ö] respectively. It is this sort of example which makes apparent the necessity of positing an [ou] diphthong for the sound of the tonic vowel of dolor and other reflexes of Vulgar Latin tonic free [ǫ]. As Johnston points out, using assonances from the Roland, the stressed element of such an [ou] diphthong could assonate with tonic [ǫ] ([ǫ́u]: [ǫ]), while the presence of the unstressed element [-u] allows somehow for future differentiation of the diphthong.[67] Thus

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[67]See "How Close O Tonic and Free Became ö," p. 223. See also para. 5.8.4 in which Johnston's examples of assonances from the Roland are quoted.

in the Alexis, dolor as [dolo̯ur] could assonate with maisón: hóm in the same way that tórbes assonates with Róme: óltre: córre.

5.17 The Pronunciation of Early French Paradigmatic [ou]

It has just been indicated that the tonic vowels of such words as nevod and dolor must have been diphthongs, [ou], in eleventh century French. The first or stressed element[68] of such a diphthong could assonate with words like baron, loinz, maison while the second element of the diphthong accounts for divergent reflexes: [dolo̯ur]> [dulõr] but [to̯rbes]> [turbes]. Moreover since the second element of a possible paradigmatic [ou] diphthong is to be responsible for launching the evolution towards the reflex [ö], the most likely sound to be posited here is a palatalized diphthongal [-ü]. This is the theory advanced by Johnston who claims that the sound of paradigmatic [ou] in Early French was [oü].[69] This is also the first stage posited in the fronting of Vulgar Latin tonic free [o̯] by several scholars who either reject or neglect mention of a stage [*eu] in the evolution of this vowel.[70] The idea is that the fronting of the second element to [ü] in turn caused assimilation of the first element to [ö], to produce the form [öü] which then simplified to [õ].

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[68]These diphthongs are generally regarded as descending diphthongs at this time. See Pope, From Latin to Modern French, p. 104.

[69]"How Close O Tonic and Free Became õ," p. 222.

[70]Ibid., pp. 219-20. See also Dauzat, Phonétique et grammaire historique de la langue française, pp. 62-63.

5.18 Comparing Reflexes of the [ou] Diphthongs

It has just been suggested that the sound represented by the graphy o in eleventh century spellings of tonic free [ǫ] was actually a paradigmatic diphthong [ou] whose second element had palatalized to [oü]. It is now necessary to recall that complete vocalization of [l] is claimed to have taken place by this time,[71] and that a diphthong [ou] arising from vocalization of Latin ŭ, ō, ŏ + [l] is presumably extant during or before this period. Thus it appears that two [ou] diphthongs existed in close proximity at some point just prior to, or in the early part of the eleventh century and that convergence of their reflexes is therefore to be expected. However paradigmatic [ou] became [ö] (FLŌRE > fleur, DOLŌREM > douleur) while the result of vocalization was [u] (ŬLTRA > outre, CŬLPA > couve, DŎLVE > douve).

5.19 Differentiation of Paradigmatic [ou]

If two apparently similar diphthongs evolve differently, it might be inferred that they were not in fact composed of the same sounds or that they did not exist simultaneously in the system. One possible explanation of the divergent developments of the [ou] diphthongs is that [ou] from one source had simplified or diversified before [ou] from another source entered the system and that in this manner convergence of the reflexes was averted. If this is the case

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[71] See para. 5.10.

then it seems valid to gather from the evidence of the authorities that paradigmatic diphthongization preceded complete vocalization[72] and that the paradigmatic [ou] diphthong appeared and developed before the beginning of complete vocalization of ŭ, ō, ŏ + [l] to produce the diphthong [ou]. If this line of reasoning is correct then it is significant to establish the date of diversification of paradigmatic [ou] and thereby attempt to delimit the earliest possible dates for the beginning of complete vocalization after ŭ, ō and ŏ.

5.20 The Fronting of Latin ū to [ü]

If differentiation of the paradigmatic diphthong [ou] preceded complete vocalization it seems reasonable to assume, considering the

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[72] Straka points out that the evolution of words such as DĒBET > *deivet > *deift > deit, MŌRES > *moures > moeurs indicates that diphthongization of free stressed higher-mid [ę] and [ǫ] must have been antecedent to syncopation of the final vowel since the latter process would have checked the preceding syllable. Words such as TALIS > *taelis > tels > teus show that vocalization could only occur after such syncopation of the final vowel and thus that paradigmatic diphthongization of tonic free ā, [ę] and [ę] must have preceded vocalization. Straka claims that this diphthongization could not have occurred before the second half of the sixth century. See "Contribution à la description et à l'histoire des consonnes L," pp. 300-02.

Fouché claims that paradigmatic diphthongization of Vulgar Latin tonic free [ǫ] to [ǫu] occurred in the late seventh century, Phonétique historique, II, 229. Slight manuscript evidence for this stage in the evolution of tonic free [o] is found in the forms bellezour and soure in the Eulalia and correcious in the fragment of the Sermon on Jonah. See para. 5.8.2 and Pope, From Latin to Modern French, pp. 103-04.

diphthong's reflex [ö], that differentiation took the form [ou]> [oü].[73] If this is what actually occurred, then a connection is implied between the fronting or palatalization of the diphthong's second element and the systematic palatalization of Latin ū to [ü] in French.[74] However the reflex [u] of the vocalization diphthong [ou] shows no evidence of fronting and must conversely be dissociated from the systematic palatalization of ū. The date of commencement of complete vocalization would therefore appear to have necessarily post-dated systematic palatalization of ū. However the problem of the latter sound change and its relation to the two [ou] diphthongs is exacerbated by some of the chronologies which have been suggested for these developments. For example, Straka proposes the following sequence of events:

1. diphthongization of VL [o̯] ([o̯]> [o̯u̯]) - 6th century
2. vocalization of [ɬ] (ŭ, ō, ǒ + [ɬ]> [o̯u̯])- 7th century
3. palatalization of Latin ū (ū > [ü]) - 8th century.[75]

If this sequence is accurate, it is difficult to understand why, of two [ou] diphthongs introduced into the language within a century of

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[73]See para. 5.8.3.

[74]Latin u was fronted to [ü] in all positions in French, whether stressed or unstressed, checked or free. See Bourciez, Eléments de linguistique romane, p. 151.

[75]"Contribution à la description et à l'histoire des consonnes L," pp. 302-03.

each other, one would be influenced by a sound change which is subsequent to the appearance of both diphthongs, while the other would be totally unaffected. It is even more taxing to comprehend why the [ou] in closest chronological proximity to the palatalization of ū is the [ou] which remains unpalatalized. With these objections in mind, it seems unlikely that complete vocalization could have occurred at such an early date.

5.21 Placing Vocalization at a Later Date

Fouché's proposed chronology of the [ou] diphthongs and the palatalization of Latin long ū differs somewhat from that of Straka. He concurs in placing paradigmatic diphthongization of Vulgar Latin tonic free [o̩] before palatalization of ū but proposes a closer chronological proximity for the two developments and in fact sees the first event ([o̩] > [ou]) as a phonetic tendency which set the trend for the second.[76] His proposed sequence is also in accord with Straka's in that he maintains that paradigmatic [ou] preceded the [ou] produced by vocalization. However he separates the two diphthongs by a much larger distance in time by placing vocalization, not in the

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76 Phonétique historique, II, 229: "L'[u] postdorsal et prévélaire est devenu médiodorsal et postpalatal, puis médiopalatal. La tendance qui a amené la diphtongaison de ŏ en o̯u se retrouve donc ici, mais cette fois plus forte, puisque c'est dans sa totalité que l'[u] a été transformé, et non seulement l'[u] bref en syllabe fermée, mais encore l'[u] long en syllabe ouverte. Ce renforcement de la tendance laisse d'ailleurs supposer que le passage de [u] à [ü] est postérieur à la diphtongaison de ŏ."

seventh century, but in the eleventh.[77] Fouché's chronology differs even more significantly from Straka's by placing the palatalization of Latin ū between the introduction of each [ou] diphthong rather than subsequent to both:

1. diphthongization of VL [ǫ] > [ǫu] - (late) seventh century
2. palatalization of VL [ū] > [ü] - eighth, ninth century
(3. differentiation of VL [ouJ > [oü])
4. vocalization of VL [ǫ], [ǫ] + [ɬ] > [ǫu] - tenth, eleventh century.[78]

In Fouché's scheme palatalization of Latin ū follows hard on the heels of the appearance of the first [ou] diphthong but predates the introduction of [ou] from vocalization by approximately two centuries. This chronology appears to be more satisfactory to explain the divergence of the two [ou] diphthongs especially if the systematic fronting of long ū is indeed a decisive factor accounting for this divergence.

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[77] Phonétique historique, II, 308 and III, 857-58.

[78] Ibid., II, 229: "En plaçant la diphtongaison de ę, ǫ pendant la seconde moitié du Ve siècle et la première moitié du VIe, il peut sembler suffisant de faire commencer celle de ę, a au début du VIIe et celle de ǫ à la fin du même siècle." Fouché discusses the palatalization of ū in II, 203-07 and III, 858, and differentiation of VL [ou] in III, 858.

5.22 Quality of Diphthongal [-u̯] in Other Velar Diphthongs

If palatalization of diphthongal [-u̯] in the paradigmatic [ou] diphthong was indeed a salient feature in its evolution to [ö], then it is pertinent to speculate on the quality of [-u̯] in other velar diphthongs. None appears to represent a case analagous to paradigmatic [ou]. Johnston points out that Classical Latin [au] was not fronted to [*aü] because at the moment of the systematic palatalization of long ū, [au] had attained or surpassed a stage [ao̯] in the move towards monophthongization to [o̯]. This seems to be confirmed by ninth century spellings of CAUSA as cosa in the Strasbourg Oaths and kosa in the Eulalia which indicate that C.L. [au] had simplified by this time.[79]

5.23 Diphthongal [-u̯] in the Vocalization Diphthongs

The diphthongs resulting from vocalization could not have escaped palatalization in the same manner as Classical Latin [au] since vocalization presumably post-dated systematic palatalization of Latin ū. The reflexes of four of the vocalization diphthongs are back vowels: [au] and [eau] became [o] while [o̯u] and [o̯u] became [u]. Fronting of diphthongal [-u̯] unquestionably did not influence the evolution of these diphthongs. It would thus seem illogical and inconsistent to posit such fronting in the case of the other vocalization diphthongs, [eu], [ieu], [ueu], in spite of the fact

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[79]"How Close O Tonic and Free Became ö," pp. 219-20.

that the reflex of each is a front-rounded vowel, [ö] or [jö]. In fact the result of the reduction of these latter diphthongs to a front-rounded vowel has been explained on the basis of assimilation of front-rounded [e-] and back-rounded [-u].[80] Thus since it is either completely inappropriate in some cases or unnecessary in others to posit fronting of diphthongal [-u] among the vocalization diphthongs, it seems reasonable to assume that it did not occur in any of these instances and that the diphthongal [-u] of the vocalization diphthongs was thus not directly affected by the systematic palatalization of Gallo-Roman high [u].

5.24 Necessity of Positing a Time Lapse

The reflexes of the vocalization diphthongs appear to indicate that diphthongal [-u̯] was not influenced in these cases by the systematic palatalization of Gallo-Roman [u]. In contrast, the assumption that palatalization of Gallo-Roman [u] was instrumental in the fronting of paradigmatic [ou] appears to be a necessary condition of the account adopted here (see para. 5.16 - 5.17) of its evolution. The most obvious conclusion to be drawn is that the appearance of the vocalization diphthongs was not contemporaneous with the paradigmatic diphthongization of C.L. tonic free ō (and ŭ) to [ou]. Placing vocalization at a later date, as in Fouché's chronology (see para. 5.21), is not a complete solution to the

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[80] See Fouché, Phonétique historique, II, 304, 323, regarding [eu] and [ieu], and [ueu] respectively.

dilemna unless a time lapse implies that the system had changed sufficiently in the interval to inhibit palatalization of diphthongal [-u̯] in the vocalization diphthongs. However, in the light of the arguments adopted here concerning the evolution of paradigmatic [ou], and until another account can be made of the divergent reflexes of paradigmatic [ou] and the reflexes of the vocalization diphthongs, it is necessary to posit a significant time lapse between the appearance of paradigmatic [ou] and the occurrence of vocalization.

5.25 Variations in Rates of Reduction

A comparison of the development of paradigmatic [ou] and [ou] resulting from vocalization has suggested that complete vocalization could not have occurred until a point well removed from both paradigmatic diphthongization of the higher-mid vowels and from the systematic palatalization of Classical Latin ū. On the basis of the dates given by authorities for the latter two developments, it was concluded that complete vocalization could not have begun until approximately the tenth or eleventh centuries. However as this period is particularly sparse in manuscript evidence, it is difficult to know if any variation occurred in the date of appearance of the various diphthongs. What is evident however is a variation in the rates of reduction of the diphthongs once they had appeared. Generalization of the ou and eu digraphs to represent single sounds implies early monophthongization of the [ou] and [eu] diphthongs. In contrast [au] and [eau] appear to have monophthongized at a later date. The following

chapter takes up the question of paradigmatic influences upon the dates and results of reduction of the vocalization diphthongs in an attempt to further corroborate the dates posited here for the commencement and termination of vocalization.

VI. PARADIGMATIC INFLUENCES ON REDUCTION OF THE VOCALIZATION DIPHTHONGS

6.1 Varying Rates of Monophthongization

Fouché argues that vocalization of preconsonantal [l] occurred at various rates according to the timbre of the vowel preceding [l].[1] This is difficult to demonstrate on the basis of manuscript evidence because of the paucity of examples from the period during which vocalization was presumably taking place.[2] When documentation becomes more abundant in the late twelfth and thirteenth centuries, vocalization is complete and some of the resultant diphthongs have already reduced to monophthongs. Whether or not vocalization itself occurred at varying rates, it can be argued with some documentary support that monophthongization of the ensuing diphthongs varied in accordance with the resultant single sound produced, either /u/, /ö/ or /o/. Rhymes from the late twelfth century indicate that both [ou] and [eu] had simplified respectively to /u/ and /ö/ by this period. However, monophthongization of [au] and [eau] seems to have occurred at a considerably later date, perhaps not until the thirteenth and fifteenth centuries respectively, or even more recently.[3]

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[1] Phonétique historique du français, III, 857-58.

[2] See para. 3.2.

[3] See para. 5.5, 5.9 and 5.11.

6.2 Significance of Variation in Rates of Reduction

Simplification of all the diphthongs produced by vocalization resulted eventually in reduction to three different phonemes: /u/, /ö/ and /o/. However the dates of reduction appear to vary in accordance with whichever phoneme resulted from reduction. For example the diphthongs which monophthongized to /u/ and /ö/ appear to have reduced earlier than the diphthongs which evolved to /o/. The discrepancy in dates of reduction suggests that an investigation could be made to discover the influences of the evolving vowel system upon the dates and results of monophthongization of each of the diphthongs, or groups of diphthongs, to /u/, /ö/ and /o/. Inspection of the vowel system at the time that each group of diphthongs reduced to one of the three phonemes involved may suggest the role played by paradigmatic influences in the evolution of the diphthongs. Insofar as manuscript evidence of the dates and chronological order of monophthongization of the vocalization diphthongs can be shown to correspond to other events in the vowel system, the influence of the paradigm may be corroborated.

6.3 "Holes in the System"

Each of the three phonemes /u/, /ö/ and /o/, which were the final products of reduction of the vocalization diphthongs, shared in common the distinction of occupying positions in the vowel paradigm which had previously been vacant at various points in the evolution of Old French. That is, the combinatory latitudes within the Old French system which required the distinctive features represented by each of

these three phonemes were in desuetude at some point and thus represented "holes" in the system.[4] Because of shifting phonemes, both /u/ and /o/ temporarily disappeared from the vowel system while /ö/ was a new phoneme which had not been present in, or immediately pertinent to, the preceding Gallo Roman system. The dates at which these vacancies occurred or became significant to the system appear to be linked to the dates at which each group of vocalization diphthongs reduced. Because of this it appears that the results of simplification may in each case have been influenced to some extent by the hole in the system in existence at the time of simplification.

6.4.1 Emergence of the "Holes in the System"

The "holes in the system" involving /u/, /ö/ and /o/ appear to have sequentially occurred following the palatalization of Latin ū to /ü/. During the Gallo Roman period,[5] the palatalization of high back rounded /u/[6] precipitated an imbalance in the relationships of the

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[4]See André Martinet, Economie des changements phonétiques, 2e ed. (Berne, 1955), pp. 80-93; "Phonetics and Linguistic Evolution," in Manual of Phonetics, ed. Louise Kaiser (Amsterdam, 1957), p. 270; Elements of General Linguistics (Chicago, 1964), p. 196. See also Romeo, The Economy of Diphthongization in Early Romance, p. 19.

[5]Pope delimits the period as extending from the end of the fifth century to the middle of the ninth (From Latin to Modern French, p. 9).

[6]Straka reports that completion of the palatalization of ū is generally attributed to the eighth century: "On sait aussi qu'à la suite de longues discussions, on pense généralement que u n'a atteint le stade final de ü qu'au VIIIe siècle." ("Contribution à la description et à l'histoire des consonnes L," p. 303.)

vowel phonemes to each other. The Gallo Roman vowel system, inherited from Vulgar Latin, was one of four degrees of aperture in the case of the stressed vowels[7] and three degrees in the unstressed system. In all syntagmatic positions, free and checked,[8] stressed and unstressed, the orders participated in an opposition of localization formed by two series: front unrounded opposed to back rounded. This opposition was extended to all orders except the most low in the checked and unstressed systems, since in these two cases the lowest order contained the single phoneme /a/.[9]

i	←(u)	i	←(u)	i	←(u)
ẹi	ọu	ẹ	ọ	e	o
ię	uę	ę	ǫ	a	
ę	ǫ	a			
Free Stressed		Checked Stressed		Unstressed	

Palatalization of high back rounded /u/ occurred in all positions, both

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[7]For charts illustrating the evolution of the free stressed system from Vulgar Latin to Early Francian, see Romeo, The Economy of Diphthongization in Early Romance, p. 105.

[8]For a discussion of the basis upon which distinctions are made between vowels in free and in checked position, see Pope, From Latin to Modern French, p. 95.

[9]This functional-structural analysis of the vowel paradigm and the diagrams which follow are drawn from E. Dorfman, History of the French Language, Mimeographed Notes, University of Alberta (1968), pp. 83-86. See also Romeo, The Economy of Diphthongization in Early Romance, p. 105.

stressed and unstressed and whether /u/ was in free or checked syllable.[10] In each case, the effect upon the system was the same: disturbance of the opposition of localization (front unrounded vs. back rounded) in the highest order of vowels.

6.4.2 The First Hole in the System - /u/

One immediate consequence of the forward movement of high back /u/ was the creation of an imbalance in the form of a hole in the system (or vacant combinatory latitude) in the highest order of vowels. Romeo briefly discusses the paradigmatic implications in the forward movement of /u/ and points out that Meyer-Lübke[11] was perhaps the first to express the notion of a "place laissée vide" in the vowel system as a result of this shift.[12] Since high back /u/ in the Gallo Roman system had been a member of the correlation[13] participating in the opposition of localization (front vs. back), its loss would theoretically involve a disturbance to the economy of the system. According to the theory of linguistic economy proposed by Martinet, the disappearance of a phoneme which is a member of a correlation implies a loss in economy in that the system will not be

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[10]See Bourciez, Eléments de linguistique romane, p. 151.

[11]See Grammaire des langues romanes, I (Paris, 1890), 93.

[12]Romeo, The Economy of Diphthongization in Early Romance, p. 19.

[13]Ibid., p. 111. Romeo defines a correlation as "André Martinet's term to describe the relationships of phonemes in series as functional units in paradigmatic structures." See also Martinet, Economie des changements phonétiques, pp. 70-71.

making maximal use of all its distinctive features.[14] In the case of Old French, the disappearance of high back /u/ meant that the highest order now lacked a back partner in the localization opposition of front vs. back and was therefore not making use of a correlation still in force among the other orders (except for the most low in the checked and unstressed systems). In terms of the system's "internal determinism"[15] it might be expected that the disappearance of the phoneme /u/ and resultant vacant slot would theoretically initiate an attempt to correct the imbalance and restore economy through provision of a new phoneme /u/, drawn from some other source, to occupy the vacant combinatory latitude.[16]

6.4.3 The Second Hole in the System - /ö/

The forward movement of Gallo Roman /u/, now become front

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[14] Economie des changements phonétiques, p. 103: "Théoriquement donc, le système le plus stable, c'est-à-dire, phonologiquement le meilleur, sera celui dont tous les phonèmes seront intégrés, c'est-à-dire feront partie de corrélations ou de faisceaux. Ce que les premiers phonologues appellaient harmonie des systèmes phonologiques n'est pas autre chose qu'une stabilité obtenue au moyen de l'utilisation la plus large des types articulatoires pertinents."

[15] See Martinet, "Phonetics and Linguistic Evolution," p. 270.

[16] Loc. cit.: "A gap in a correlation, also called a hole in the pattern, i.e. a combinatory latitude that is not made use of, will tend to be filled." The notion of vacant combinatory latitudes in the paradigm and subsequent replacement of these vacancies has been applied to the study of a number of languages and has seemed in practice to provide a successful account of certain sound changes and a good basis for predicting others. For examples of the application of this idea, see Martinet, Economie des changements phonétiques, p. 90 and Dorfman, "Correlation and Core-Relation in Diachronic Romance Phonology," Word 24 (1968), pp. 81-98.

rounded /ü/, launched a new series by the instigation of a new set of distinctive oppositions in the highest order. This order now contained two front vowels distinctively opposed on the basis of unrounded /i/ vs. rounded /ü/. The system is now in a position to add further members to the new series by extending the correlation of front unrounded vs. front rounded to other orders. In so doing, no new feature would be necessary, since an opposition already in force in one order would merely be extended to a lower degree of aperture within the same series. The next member one might expect to be added to extend the new correlation of front unrounded vs. front rounded from the highest order to other orders would be a front rounded member in the higher mid order (or mid order in the unstressed system).[17] The new phoneme would be a front rounded partner for unrounded /e/, or its allophone [ei], in the same way that /ü/ was now the front rounded partner of /i/. It is thus at this point that the combinatory latitude theoretically represented by a phoneme /ö/ becomes significant to the system. Although the disappearance of /ü/ would also be economically sound, insofar as the system now contains /ü/, one may speak of at least a potential hole in the system in the place of /ö/.

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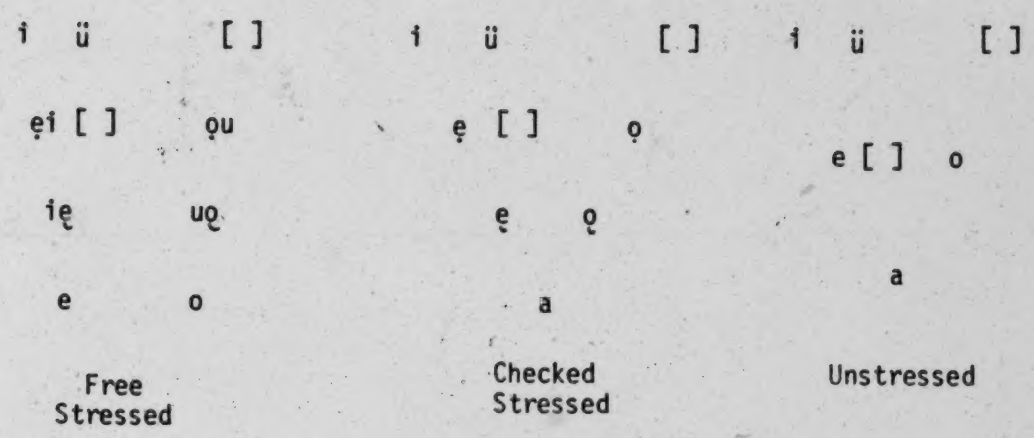
[17]The higher mid order (or mid order in the unstressed system) is a more likely alternative than a lower order because, as Martinet explains (Economie des changements phonétiques, p. 87), the wider the degree of aperture, the more difficult it becomes to distinguish rounded from unrounded phonemes.



6.4.4 The Third Hole in the System - /o/

The third potential hole in the system can also be indirectly linked to the palatalization of Classical Latin Ū to /ü/ but became significant to the system only after an intermediate step. When /u/ moved forward, leaving a vacancy in the back series, the opposition of front unrounded vs. back rounded was lost in the highest order. Since this distinctive opposition was still operative among the other orders (apart from the lowest), it might be expected, according to the theory of linguistic economy, that a move would be made towards re-establishing equilibrium by re-instating a back series in the highest order. The form of correction could be for mid-high /o/ to move upwards to fill the vacancy created by the forward shift of Gallo Roman /u/.[18] This is in fact what did occur in the checked and

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[18]See Dorfman, History of the French Language, pp. 108-09.

unstressed sub-systems when /o/ moved upwards in all cases.[19] The consequence of the upward movement of /o/ to /u/ was a vacancy in the higher-mid order (or mid order of unstressed vowels). This empty combinatory latitude may thus be described as a third hole in the system in the place of /o/.

6.5.1 The Sequence of Events

As has been pointed out, application of the principles of linguistic economy suggests that the three holes in the places of /u/, /ö/ and /o/ in Old French may be linked to the forward shift of Gallo Roman /u/. Moreover, if the palatalization of /u/ is viewed as an impetus to the subsequent occurrence of the three vacancies in the vowel system, it follows that the vacancies should become significant to the system in the sequence outlined in the preceding paragraphs: first /u/, closely followed by /ö/, and then /o/. Some theoretical support for such a prediction is provided by studies of language universals. On the basis of a study of the typologies of vowel quality systems, Philip Sedlak lists a number of tentative universals.[20] One of these is pertinent to the present topic: "A front rounded vowel implies a back rounded vowel at the same tongue

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[19]See Pope, From Latin to Modern French, p. 184.

[20]"Typological Considerations of Vowel Quality Systems," Working Papers on Language Universals, 1 (Stanford University, November, 1969), 1-40. About eighty-five vowel systems, drawn from nearly two hundred languages, were classified in groups of two-member to twelve-member systems.

height."[21] In the case of developments in Old French, this tentative universal is relevant to the situation ensuing from the palatalization of Gallo Roman /u/. When /u/ moved forward to become /ü/, leaving a vacancy in the place of /u/, the highest order contained a front rounded vowel but lacked a back vowel at the same tongue height. Thus implicit in the forward movement of /u/ and its subsequent establishment as the phoneme /ü/ would be a move towards provision of a back rounded partner at the same tongue height. The same universal may be applied in the case of the new phoneme /ö/. At approximately the same time as /ö/ appeared in the system,[22] a vacancy occurred in the place of /o/, occasioned by the upward movement of previous /o/ to /u/.[23] Thus the mid-high (or mid order in the unstressed sub-system) now contained a front rounded phoneme but no back rounded phoneme at the same tongue height. In accordance with the tentative universal proposed by Sedlak, it might be predicted that palatalization of /u/ would result first in the significance of the vacancy in the place of /u/, and that following the establishment of /ö/ as a phoneme, the vacancy in the place of /o/ would become significant.

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[21]"Typological Considerations of Vowel Quality Systems," p. 31.

[22]See para. 5.8.5 and 5.9.

[23]See Pope, From Latin to Modern French, p. 184: "In the course of the eleventh and twelfth centuries, o already a high close sound in Gallo Roman . . . moved upwards in all positions to u, i.e. to the place left vacant by the palatalization of u to ü."

6.5.2 Manuscript Evidence of Sequence of Simplification

Manuscript evidence of the dates of simplification of the vocalization diphthongs appears to be in accord with the theoretical sequence outlined in the preceding paragraph in that simplification to /u/ and /ö/ quite definitely preceded simplification to /o/.[24] This suggests that the dates and results of reduction of each of the vocalization diphthongs were influenced by paradigmatic forces in the form of the holes in the system or vacancies in the place of /u/, /õ/ and /o/. If a further correspondence can be traced between the dates and results of reduction of the diphthongs and other developments related to filling the vacancies occasioned by the palatalization of /u/, additional support will be provided to the argument in favour of paradigmatic influence.

6.6.1 Simplification of [ou] to /u/

If the holes in the pattern are viewed sequentially as emanating from the palatalization of /u/, then the vacancy in the place of /u/ must have been the first vacancy to become pertinent following palatalization. It follows that if the holes in the pattern were influential in the reduction of the vocalization diphthongs, then the reduction of [ou] to /u/ would also be the first such reduction following the palatalization of /u/. Palatalization

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[24]Manuscript evidence indicates that [ou] and [eu] had simplified to /u/ and /ö/ respectively by the eleventh and twelfth centuries while [au] does not appear to have monophthongized to /o/ until at least the thirteenth century or considerably later. See Chapter V.

of /u/ is alleged by some to have been complete by the eighth century while others see the process as extending into the ninth or beyond.[25] Manuscript evidence of the reduction of the vocalization diphthong [ou] does not appear until the twelfth century. Robson cites the forms poulles and fourment in the Marchiennes rent roll (circa 1200) in which the non-etymological digraph ou spells a single sound.[26] Fouché gives examples of rhymes occurring after 1150, such as estouz (< STŬLTUS): touz (< TŌTTUS) which appear to confirm reduction of [ou] from Vulgar Latin /o/ + preconsonantal l.[27]

6.6.2 Correspondence of Dates Involving Reduction of [ou]

Although manuscript evidence of reduction of [ou] to /u/ is somewhat removed chronologically from the palatalization of Gallo Roman /u/ and the ensuing vacancy in its place in the paradigm, such evidence does correspond significantly to another related development. The /u/ resulting from reduction of [ou] from vocalization was not the

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[25]Straka claims that it is generally agreed that palatalization of Latin u was not complete until the eighth century, in "Contribution à la description et à l'histoire des consonnes L," p. 303. Fouché places the period of palatalization in the eighth and ninth centuries, Phonétique historique, II, 207 and III, 858. Pope claims that /u/ palatalized to /ü/ in the period extending from the middle of the ninth century to the end of the eleventh, From Latin to Modern French, p. 90.

[26]"Literary Language, Spoken Dialect and the Phonological Problem in Old French," p. 149.

[27]Phonétique historique, III, 858.

only new /u/ which came into being to fill the vacancy left by the forward shift of Gallo Roman /u/. The vacancy in the place of /u/ was also filled by the upward shift of mid-high /o/. This occurred in all positions throughout the system, except in tonic free position where /o/ had previously been diphthongized. Pope reports that this upward shift of /o/ to /u/ occurred in the course of the eleventh and twelfth centuries.[28] These dates coincide closely with the dates revealed by manuscript evidence for the reduction of the vocalization diphthong [ou] to /u/, as described in the preceding paragraph. The chronological correspondence of these two developments tends to confirm paradigmatic influence, in the form of the hole in the system, upon the reduction of [ou].

6.7.1 Simplification of [eu] to /ö/

It has been argued (para. 6.4.3) that the second hole in the pattern caused by palatalization of /u/ and the consequent establishment of a new front rounded series was an incipient vacancy in the place of /ö/. If paradigmatic pressures played a role in influencing reduction of the vocalization diphthongs, it might be expected that the reduction of [eu] to /ö/ would be the second such reduction following the palatalization of Gallo Roman /u/. More precisely, palatalization of /u/ would produce a vacancy in the places of /u/ and /ö/ almost simultaneously in paradigmatic terms and therefore it might be considered likely that the impulse towards reduction of [eu]

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[28] From Latin to Modern French, p. 90.

to /ö/ would be nearly contemporaneous with that towards reduction of [ou] to /u/. This expectation seems to be confirmed by the evidence of manuscripts. Fouché cites the rhymes Iseux (< Germ. Ishildis): preux (< PRŌDE) from the second half of the twelfth century.[29] Since the reflex of a vocalization diphthong rhymes with the reflex of tonic free ō, reduction seems to be verified.[30] Pope cites rhymes of the same period from Erec et Enide which indicate that the digraph eu represented the monophthong [ö].[31]

6.7.2 Correspondence of Dates Involving Reduction of [eu]

In the same way that reduction of [ou] to /u/ appears to correspond with the systematic raising of /o/ to /u/, reduction of [eu] seems contemporaneous with other paradigmatic moves to fill the vacancy in the place of /ö/. The reflexes of tonic free ō (ŭ) and ŏ appear to have evolved to /ö/ at the same time that the vocalization diphthong [eu] monophthongized to /ö/. Pope's examples from Erec et Enide,[32] mentioned in the preceding paragraph, also include the rhymes jeus (< JŎCUS): corageus (line 3391) in which the reflexes of tonic free ŏ and tonic free ō are grouped together, offering quite cogent proof that each had reached the stage of a monophthong. A

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[29] Phonétique historique, III, 858.

[30] Using these examples as proof of monophthongization entails rejection of an [eu] diphthong in the evolution of tonic free o. See para. 5.8.4 for a discussion of this.

[31] From Latin to Modern French, p. 201. These examples are discussed in the following paragraph.

[32] Loc. cit.

further example from the same work, the rhymes jeus: seus (line 2835)[33] shows the reflex of tonic free ŏ rhyming with a reduced [eu] diphthong from vocalization. The chronological proximity of these developments tends to confirm paradigmatic influence upon the reduction of the [eu] diphthong.

6.8.1 Simplification of [au] to /o/

As had been noted (para. 6.4.3), the hole in the system in the place of /o/ was not an immediate consequence of the palatalization of Gallo Roman /u/ but followed after an intervening step. The hole in the place of /u/ was filled by the upward movement of /o/ which in turn left a vacancy in the place of /o/. Thus reduction of [au] to /o/, if linked to paradigmatic holes, would only have occurred after the upward shift of /o/. As /o/ is alleged to have moved upwards to /u/ during the eleventh and twelfth centuries,[34] [au] would not be expected to reduce to /o/ until some period subsequent to this. Pope reports that monophthongization of stressed [au] was not accepted by grammarians until the sixteenth century but that reduction probably occurred earlier in unstressed syllables and in vulgar speech. The earliest isolated indications of reduction come from the end of the thirteenth century.[35] Fouché claims that reduction of [au] began in the thirteenth century but points out that

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[33]Also quoted by Pope, From Latin to Modern French, p. 201.

[34]Ibid., p. 210.

[35]Ibid., p. 200.

this was however too late a date for the resultant /o/ to move up to /u/,[36] a point which tends to further confirm the late reduction of [au].

6.8.2 Correspondence of Dates Involving Reduction of [au]

The vacancy in the place of /o̩/, caused by the passage of /o̩/ to /u/, was filled by its lower mid partner /o̩/ which tended to close and move upwards to /o̩/ (when in free syllable position or when followed by [z]) in the thirteenth century and later.[37] Fouché points out that the o of [ôbe] and [travô] is not only posterior to the Gallo Roman period but dates from the time when the [o̩] of chose (< CAUSA) became [o̩] in the thirteenth century.[38] As in the case of the other diphthongs, [ou] and [eu], the chronological correspondence between the reduction of [au] to [o̩] and the closing of [o̩] to [o̩], both developments which corrected the vacancy in the place of /o̩/, tends to confirm paradigmatic influence upon reduction of the vocalization diphthongs.

6.9 Significance of Chronological Correspondences

An attempt has been made to demonstrate that the dates and reflexes of reduction of the vocalization diphthongs appear to

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[36]Phonétique historique, II, 300.

[37]See Pope, From Latin to Modern French, p. 200, and Ewert, The French Language, p. 59.

[38]Loc. cit.

correspond to certain paradigmatic events in Old French. These correspondences suggest that changes in the paradigm influenced the evolution of the diphthongs produced by vocalization. As well as aiding to account for the dates and results of simplification of the diphthongs, the chronological correspondence between paradigmatic events and monophthongization corroborates the evidence of the manuscripts as to the dates of reduction and provides a basis for establishing the terminal limits of vocalization of preconsonantal [l] in French.

VII. CONCLUSIONS

French is the only Neo-Latin language in which preconsonantal [l] has regularly and completely vocalized to [u]. This vocalization has traditionally been traced to a Vulgar Latin "velar" allophone of [l] in preconsonantal position, but this is inadequate in itself to account for French developments. Latin references to the pronunciation of preconsonantal [l] are difficult to interpret and the diverse development of preconsonantal [l] among the Romance languages compels some further explanation of why vocalization was either negligible, sporadic, partial or complete.

An investigation of the history and articulatory aspects of [l] sounds in various languages indicates that while a dark or back [ɬ] sound precedes vocalization to [u], such an [ɬ] and its subsequent vocalization may occur in any or all syllable positions. Because French [l] has vocalized only when preconsonantal or final, French vocalization may be more precisely described in phonotactic terms as weakening of [l] in implosive position. This description allows French vocalization to be grouped with other instances of weakening and loss of implosive consonants in the formative period of the language.

A number of isolated spellings from the Empire onwards suggest traces of early or partial vocalization but it is not until after 1200 that u is generally substituted for l in French spellings. Manuscript evidence for the immediately preceding period when complete vocalization was presumably taking place is very sparse and obscured

by dialectal confusion and the uncertain interpretation of scribal practices. When evidence of vocalization becomes more abundant in the thirteenth century, some of the vocalization diphthongs have already monophthongized. However thirteenth century spellings preserve the digraphs and trigraphs which indicate that preconsonantal [l] had previously become [u] after all but the highest vowels, adding at least six separate diphthongs or triphthongs to the language: [ou], [eu], [au], [ueu], [ieu] and [eau].

Because of the proliferation of diphthongs resulting from vocalization of [l], the ultimate impact of vocalization was upon the evolving vowel system. Evidence of this impact is instructive in delimiting the terminal and initial dates of complete vocalization in French. Two vocalization digraphs appear to have come into use as a scribal solution to the problem of representing high rounded vowels after the palatalization of u and the advent of [ö]. It is argued that the vocalization digraphs ou and eu were generalized, following reduction of the diphthongs, to represent all occurrences of [u] and [ö] sounds, respectively. This implies that monophthongization of [ou] and [eu], and hence prior complete vocalization, had taken place by the end of the eleventh century. The fact that au and eau were not generalized to represent all [o] sounds may be a reflection of their later monophthongization.

The beginning date of complete vocalization is more difficult to fix. The divergent reflexes of two [ou] diphthongs, paradigmatic [ou] (< tonic free $\bar{o}$) and vocalization [ou] (< $\breve{o}$, $\bar{o}$, $\breve{u}$ + l),

indicate that the two diphthongs were either not alike or were not contemporaneous. Since paradigmatic [ou] became [ö], a case may be made for the influence of the systematic palatalization of u to [ü] upon its evolution. Since [ou] from vocalization was conversely not fronted, but monophthongized to [u], it must be dissociated from the palatalization of ū. On the basis of this argument, it is suggested that complete vocalization could not have taken place until well after the palatalization of ū, that is, not until about the tenth century.

Monophthongization of the vocalization diphthongs resulted in three single sounds: [u], [ö] and [o]. Since each of these sounds filled the place of a previous "hole" in the vowel paradigm, a correspondence between monophthongization of the diphthongs and paradigmatic events is indicated. Emanating from the palatalization of ū to [ü], the paradigmatic "holes" occurred in the order [u], [ö] and [o]. The same chronological sequence appears in the dates of monophthongization of the vocalization diphthongs: [ou] and [eu] reduced to [u] and [ö] respectively before [au] became [o]. The occurrence of the paradigmatic "holes", the sequence in which they appeared, and other shifts in the system to fill the "holes" appear to correspond chronologically to manuscript evidence of the dates of reduction of each of the vocalization diphthongs. The correspondence between paradigmatic events and monophthongization of the diphthongs corroborates manuscript evidence of the dates of reduction and lends support to the concept of phonological space.

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APPENDIX

EXAMPLES OF WORDS IN WHICH VOCALIZATION HAS TAKEN PLACE IN THE EVOLUTION FROM LATIN TO FRENCH*

ī + [l] + vow.

AXĪLES > O.F. aissi̯s > essieus
FĪLIUS > *filts > O.F. fiz > fils
GĔNTĪLIS > gentils > gentis
*GĔNTĪLI-MENTE > gentilment > gentiment
LĪLIOS > *lilts > liz > lis

ĭ + [l] + vow.

BĂSĭLĭCA > O.F. baseuge
CONSĭLIOS > conse̯s > O.F. conseuz
*ORTĭCULOS > *orte̯z > O.F. orteuz
*PARĭCULOS > *pare̯ts > O.F. pareuz
VERMĭCULUS > *verme̯z > O.F. vermeuz

ĭ + [l] + cons.

CĂPĭLLOS > cheveux
ECCĔ ĭLLOS > ceux
frk. FĭLTIR > feutre
frk. *GĭLDA > O.F. geude
ĭLLOS > eux

ē + [l] (countertonic)

DĒLĭCĀTU > de̯giet > O.F. deugie
*FĒLTRĀRE > fe̯trer > feutrer

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*Most of the examples quoted are from the works of Pierre Fouché, Phonétique historique du français, II (Paris, 1958) and III (Paris, 1961) and M. K. Pope, From Latin to Modern French (Manchester, 1934).

ĕ + [l] + vow.

CAELOS > cieɬs > cieus (cieux)
MĔLIOR > mieɬdre > O.F. mieudre
MĔLIUS > mieuz > mieux
VĔTŬLUS > vieɬts > vieux

ĕ + [l] + cons.

ANĔLLUS > aneus > anneau
BĔLLUS > beɬs > beaus (beaux)
*CAPPĔLUS > chapeɬs > chapeaus (chapeaux)
frk. HĔLMU > heɬme > heaume
*MARTĔLLUS > marteɬs > marteaus (marteaux)
PĔLLES > peɬs > peaux
PORCĔLLUS > porceɬs > porceaux
RASTĔLLUS > rasteɬs > rasteaux (rateaux)
SĬTĔLLUS > seɬs > seaux
germ. WILIHĔLMU > Guilleɬme > Guillaume

ĕ + [l] countertonic

*BĔLLITĀTE > beɬtet > beauté
MĔRĔTRICE > meɬtriz > O.F. meutris
*NOVĔLLITĀTE > noveɬtet > nouveauté

ā + [l] + vow.

PĀLOS > peɬs > peus > pieux
TĀLES > teɬs > teus > O.F. tieus

CĂLĂMU > chaɬme > chaume
CĂLĬDA > chaɬde > chaude
CĂLĬDUS > chaɬd > chaud
*CRAMACŪLUS > *cramaɬz > O.F. cramauz
*GŪBERNĀC(U)LUS > *governaɬz > O.F. governauz
*SŪSPRIAC(U)LUS > sospiraɬz > O.F. sospirauz
*TRIPALIOS > *travaɬz > travauz (travaux)
*TRIPALIET > *travaɬt > O.F. travaut

á + [l] + cons.

ALBA > aɫbe > aube
ALNU > aɫne > aune
ALTA > haɫta > haute
ALT(Ĕ)RU > aɫtre > autre
FALDA > faɫde > faude
FALSA > faɫse > fausse
*FALLITA > faɫte > faute
MALVA > maɫve > mauve
PALMA > paɫme > paume
PSALMU > saɫme > saume
SALSA > sauce
SALTAT > saɫte > saute
SALVIA > saɫge > sauge
TALPA > taɫpe > taupe

a + [l] + cons. (countertonic)

*ALBISPĪNA > aubespine (aubépine)
*ALĬCŪNU > aɫcun > aucun
*ALĬTĀNTU > aɫtant > autant
ALTĀRE > aɫter > auter (autel)
CĂBALLICĀRE > chevaɫchier > chevaucher
CALCĔĀRE > chaɫcier > chaucier (chausser)
*DALPHINU > daɫphin > dauphin
*FALCARE > faɫchier > fauchier (faucher)
frk. FALDISTOL > faɫdestuel > faudestuel (fauteuil)
*FALLERAT > faɫdra > faudra
*MALIFATIU > maɫvais > mauvais
(NUX) GALLICA > (noix) gauge
PALPEBRA > *palpetra > paɫpiere > paupière
SILVATICU > saɫvage > sauvage
SALICETU > Saɫcy > Saussy
SALTĀRE > sauter

ŏ + [l] + vow.

*AVIŎLUS > aiüels > aiüeux > aieux
*CAPRIŎLUS > chevrüels > chevrüeus (chevreuil)
DŎLES > düels > düeus > O.F. dieus
DŎLET > düelt > düeut > O.F. dieut
GLADIŎLUS > glaiüels > glaiüeus (glaieul)
ŎCULOS > üelz > yeus (yeux)
SŎLES > süels > süeus > O.F. sieus
SŎLET > süelt > süeut > O.F. sieut
*VŎLES > vüels > v(u)eus (veux)
*VŎLET > vüelt > v(u)eut

CŎLĂPU > coup
*CŎLŪRU > coɫdre > coudre
MŎLĔRE > moɫdre > moudre

ŏ + [l] + cons.

ABSŎL(VĔ)RE > assoɬdre > assoudre (absoudre)
CAULIS > choɬs > choux
CŎLLŎCAT > coɬche > couche
celt. DŎLVA > doɬve > douve
FŎLLES > foɬs > fous
PŎLLĬCE > poɬce > pouce
TŎLLIT > tout
TŎLLĬTU > tout
*TŎLLĬTA > toɬte > toute
*VŎLVĬTA > voɬte > voute

ŏ + [l] + cons. (countertonic)

MŎLINARIU > mounier (meunier)
SŎLLICITĀRE > soucier
*VŎL(E)RAT > voudra

ō + [l] + cons. (countertonic)

SŌLSEQUIA > soucie

ó + [l] + vow.

SŌLUS > O.F. seus

ŭ + [l] + vow.

FENŬC(U)LUS > *fenoɬz > O.F. fenouz
GENŬC(U)LOS > *genoɬz > genouz (genoux)

ŭ + [l] + cons.

A(U)SCŬLTAT > escoɬte > escoute (ecoute)
BŬLG(A)RU > bougre
celt. BŬLGA > *boɬge > bouge
*CŬLGITA > *coɬte > coute
CŬLPA > coupe
CŬLTRU > coutre
DŬLCE > douz (douce)
MŬLTA > moute
MŬLTU > mout
PŬLL(Ĭ)TRA > poutre

ŭ + [l] + cons. (cont'd.)

PŬL(VĔ)RE > poudre
PŬLSU > pous
PŬLTE > pout
SŬLFUR > *su+fure > soufre
ŬLMU > oume
ŬLTRA > outre

ŭ + [l] + cons. (countertonic)

A(U)SCŬLTĀRE > esco+ter > ecouter
*BŬLL(Ĭ)CĀRE > bougier
CŬLPABĬLEM > co+pable > coupable
CŬLTĔLLUS > coute+s > couteaux
celt. MŬLTŌNE > mouton
PŬLMŌNE > poumon
PŬLSĀRE > pousser
ULPIACU > O+chy > Ouchy
*VULPĬC(U)LU > *go+pil > O.F. goupil (goupille)

ú + [l] + vow.

PŪLĬCE > puce
CŪLUS > culs

ú + [l] + cons.

NŪLLUS > nuls > nul
PŪLLICELLA > pulcella > pucelle